A Revision of the New Zealand Recent Species Previously Known as Notosetia Iredale, 1915 (Rissoidae, Gastropoda)

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Abstract

The thirty recent New Zealand species previously classified in the genus *Notosetia* are reviewed. The revised classification of these species is based on a study of the animal, operculum and radula. The species are regrouped in three families and nine genera and subgenera. Five new species, three new genera, three new subgenera, and one new subfamily are described.

Introduction

The Rissoidae has long been a dumping ground for small featureless shells, which is one of the reasons for its unpopularity. There are certain genera that get more than their fair share of anomalous species, *Rissoa, Setia, Cingula* and *Barleeia* being some of the better known. The genus *Notosetia* has a large number of species ascribed to it in both New Zealand and Australia, and has proved to be a particularly heterogeneous group. Iredale (1915), as he named the genus, stated "I consider it to be a heterogeneous assemblage, but consider it wiser to provide quite a new name than encumber Neozelanic literature with another unnecessary extra-limital innovation." Unfortunately Iredale chose as the type, a species that is not even a rissoid, but a liotiid, a family in the Trochacea!

Iredale did not provide a generic description but later authors have included in the genus small featureless, white or coloured shells of simple outline, with a smooth or indistinctly sculptured surface. Examination of the operculae, radulae and animals of several species, has proved the heterogeneous nature of the group, the classification used here being built primarily on these characters.

Powell (1962) listed 31 species from New Zealand in his check list, but Smith (1962) added two new species, removed two by synonymy and *N. pupinella* Finlay was placed in *Epigrus*.

The majority of the species of *"Notosetia"* belong to a new genus related to the true rissoids. Four species are included in the Eatoniellidae (Ponder, 1965b) and six in the Cingulopsidae. Two species are included in *Rissoa* (*Haurakia*) (Rissoidae). The type and one other species belong to the Liotiidae. The terminology and method used in the descriptions of the animal, operculum and radula is the same as that used by Ponder (1965b).

Abbreviations

A.M.—Auckland Museum. Coll.—Collection. D.M.—Dominion Museum; G.S.—Geological Survey. O.I.—N.Z. Oceanographic Institute.

Rec. Auck. Inst. Mus. Vol. 6, No. 2, pp. 101-131, 15th Oct., 1965.

Family **LIOTIIDAE**

Genus **NOTOSETIA** Iredale, 1915

Type (o.d.): *Barleeia neozelanica* Suter, 1898

Shell small, ovate-conical, imperforate, white, thin, smooth, shining. Sculpture of fine, oblique growth lines and a few spiral striae around umbilical area. Protoconch small, globose, 1½ smooth convex whorls, suture impressed, aperture angled above, peristome discontinuous, sharp, not much thickened within, columella vertical, slightly concave, callous; a thin callosity on the parietal wall. Outer lip excavated below. No posterior sinus and no external varix.

Operculum: Polygyrous, circular, thin, transparent, yellowish, margin rather irregular, about twelve closely spiralling revolutions.

Radula: Formula $\infty + 1 + 1 + 3 + 1 + 3 + 1 + 1 + \infty$ typically rhipidoglossan. Central with several long denticles, and is smallest tooth in row. Laterals with denticles of varying size and number, 1 to 3 having several long denticles, fourth with few, fifth finely serrate. Marginals numerous, long and slender, hook-like terminally.

Clearly a member of the Liotiidae, *Notosetia* is close to *Lissotesta*. The present investigation recognises only two species of this genus.

Notosetia neozelanica (Suter). **Pl. 12, figs. 10, 11; Pl. 13, figs. 1, 1a.**

1898 *Barleeia neozelanica* Suter, Proc. Mal. Soc. Lond. 3, p. 8, fig. 5.
1913 *Rissoa* (*Setia*) *neozelanica* (Suter); Suter, Man. N.Z. Moll., p. 214, pl. 13, fig. 1.
1915 *Notosetia neozelanica* (Suter); Iredale Trans. N.Z. Inst., 47, p. 452.
1933 *Notosetia neozelanica* (Suter); Powell, Rec. Auck. Inst. Mus. 1 (4), p. 197, pl. 34, fig. 10 (Lectotype).
1955 *Notosetia neozelanica* (Suter); Powell, D.S.I.R., Cape Exped. Series Bull., 15, p. 85.
1962 *Notosetia neozelanica* (Suter); Smith Rec. Dom. Mus. 4 (5), p. 57, fig. 12.

This species is very distinctive and shows little variation. Smith (1962) described and figured the tightly coiled operculum and remarked that it was "unusual for the genus." A figure of a paralectotype (fig. 1, 1a) is given for comparison with the other species discussed.

Animal: (Off Otago Heads). Unpigmented but other details unknown (dried material).

Operculum: (Fig. 10). As described for genus.

Radula: (Fig. 11). Central 10 denticles, smallest tooth in row. First, second and third laterals with about 8, 9 and 5-7 long denticles respectively, fourth with 3 blunt cusps and fifth with a straight row of fine serrations. Marginals numerous, long and slender, with hooked ends, progressively smaller towards outermost marginal.

Lectotype: Stewart Island, Suter collection (Geol. Surv.).

Height 2.0 mm. Width 1.5 mm (from Suter).

Material Examined:

Paralectotypes (G.S. and D.M.); 50 fathoms, off Oamaru, Finlay Coll. (A.M.); 60 fathoms, off Otago Heads, Finlay Collection (A.M.); B.S. 190, 45° 45.4' S., 171° 5' E., off East Otago Coast in 300 fathoms, M.V. "Alert", 16/8/55 (D.M.); 40-50 fathoms, off Cape Saunders, Otago, Laws Collection

(A.M.); Foveaux Strait, Finlay Collection (A.M.); 100 fathoms, Puysegur Point (D.M.); Middle Grounds, near Ruapuke Island, Foxeaux Strait, O. Allan, -/3/51 (D.M.); Stewart Island (Powell Coll. and D.M.); 50 fathoms, off Halfmoon Bay, Stewart Island, -/10/54 (Gardner Coll.); Port Pegasus, Stewart Island, in 5 fathoms, 23/11/47, M.V. "Alert" (D.M.); 8-10 fathoms, Paterson Inlet, Stewart Island, 19/4/54, in algae (Smith Coll.); B.S. 141, immediately North of South Point, Kaipipi Bay, Paterson Inlet, M.V. "Alert", W. H. Dawbin, 12/1/52 (D.M.); B.S. 104, Chalky Inlet, 20 fathoms, M.V. "Alert", W. H. Dawbin, 6/5/50 (D.M.); B.S. 137, off Passage Point, Dusky Sound, 12-15 fathoms, M.V. "Alert", W. H. Dawbin, 8/1/52 (D.M.); B.S. 106, between Unnamed Island and Breaksea, Dusky Sound, 20 fathoms, M.V. "Alert", W. H. Dawbin, 7/5/50 (D.M.); 107, Goal Passage, Doubtful Sound, 25 fathoms, M.V. "Alert", W. H. Dawbin, 8/5/50 (D.M.); B.S. 110, inside entrance to George Sound, 15-20 fathoms, M.V. "Alert", W. H. Dawbin, 10/5/50 (D.M.); B.S. 109, Bligh Sound, 25 fathoms, M.V. "Alert", W. H. Dawbin, 10/5/50 (D.M.); Snares Island, 50 fathoms (A.M., Powell Coll., D.M.); Auckland Islands, Finlay Coll. (A.M.); 6 fathoms, Emergency Bay, Carnley Harbour, Auckland Islands, Cape Expedition (Powell Coll.); Carnley Harbour, Auckland Islands, J. Sorensen, -/4/47 (D.M.); Bounty Islands, 50 fathoms, Finlay Coll. (A.M. and Powell Coll.) and 40-45 fathoms (D.M.); off Leeward Island, Antipodes Islands, 15 fathoms, -/11/50, R. K. Dell (D.M.); Chatham Island Exped. Stat. 38, South of Little Mangere, 43 fathoms, M.V. "Alert", W. H. Dawbin, 2/2/54 (D.M.); Chatham Island Exped. Stat. 20, 43° 39' S., 176° 34.5' E., off Cape Young, 20 fathoms, 28/1/54, M.V. "Alert" (D.M.); Waitangi, Chatham Islands, shell sand, A. W. B. Powell, -/2/33 (A.M.); Chatham Island Exped. Stat. 23, 43° 32.5' S., 176° 47.5' E., North of the Sisters, 33 fathoms, 29/1/54, M.V. "Alert" (D.M.); Mernoo Bank, 43° 21' S., 175° E., 52 fathoms (D.M.); R.R.S. Discovery II Stat. 2772, Discovery Bank, 140 metres, 1/12/50 (D.M.).

Distribution: South of the South Island, Stewart Island, and the Snares, Auckland, Antipodes, Bounty and Chatham Islands, in moderately deep water.

Notosetia aoteana Powell. Pl. 13, fig. 2.

1937 *Notosetia aoteana* Powell, Disc. Rep. 15, p. 200, pl. 53, fig. 11.

This species is rather doubtfully congeneric with *Notosetia neozelanica*. It differs from the type in being smaller, with a narrow, deep umbilicus, and more spiral striations on the base. The protoconch appears to be finely punctate. Animal, operculum and radula unknown.

Holotype: Discovery II Stat. 933, off Three Kings Islands, 260 metres (Brit. Mus.).

Height 1.2 mm. Width 1 mm. (from Powell)

Material Examined: Paratypes (Powell Coll.); off North Cape, 15 fathoms (D.M.).

Family EATONIELLIDAE

The following species of *"Notosetia"* are eatoniellids and are discussed elsewhere (Ponder, 1965b).
"N." dilatata Powell, 1955; *"N." lampra* (Suter, 1908); *"N." pupinella* Finlay, 1927 and, *"N." verecunda* (Suter, 1908).

Family RISSOIDAE

Genus RISSOA Freminuille, 1813

Type (s.d., Bucquoy, Dautzenberg and Dollfus, 1884): *Rissoa ventricosa* Desmarest 1814.

Subgenus **HAURAKIA** Iredale, 1915

Type (o.d.): *Rissoa hamiltoni* Suter, 1898.

Both *Notosetia infecta* (Suter) and *N. aupouria* Powell should be included in *Haurakia,* as their shells agree closely with the other members of the subgenus in apertural features, texture, and coloration. The operculum and radula of *R.* (*H.*) *infecta* are very similar to those of *R.* (*H.*) *hamiltoni* and are figured in a forthcoming publication.

POWELLISETIA n. gen.

Type: *Rissoa porcellana* Suter, 1908

Shell small, whorls flattened, convex or shouldered, thin, either smooth, finely spirally striate or with one or two carinae, protoconch slightly tilted, rather flat on top, smooth or finely spirally striate. Peristome continuous, the columella nearly vertical, not much thickened; inner lip thin; outer lip sharp edged, somewhat thickened within, and, typically, a varix externally (not present in some species). A fairly strong to weak posterior sinus and a very shallow excavation anteriorly. Often perforate.

Animal: Unpigmented externally, with a long, narrow, bilobed snout. Cephalic tentacles long, slightly club-shaped, flattened, setose, with large eyes in swellings at their outer bases; foot long, wide in front, tapering regularly behind. No caudal tentacle. Mucous slit small and central.

Operculum: Thin, slightly concave, with a wide nucleus of approximately two revolutions. Columella edge convex, little or no thickening.

Radula: Central rather large, with a pair of lateral processes, a second pair internal to these. Cusps very small, numerous, median cusp small, forming the apex of a triangle, the small cusps on the sides. Lateral with a long outer portion, a smooth short area before the main cusp, finely denticulate behind. Marginals elongate, curved, finely serrate or smooth.

Powellisetia is clearly related to *Rissoa* (*Haurakia*) and the true rissoids. The only animal examined in any detail is *P. subtenuis* Powell, and, assuming this species is reasonably typical of the genus, the main differences seem to be in certain external features of the animal, such as the absence of a caudal tentacle, and details of the radula. (The animal, operculum and radula of *Haurakia hamiltoni* (Suter) are described in a forthcoming publication). The shell of *Powellisetia* is very similar to that of some species of *Haurakia,* differing mainly in general appearance due to the summation of a number of minor characters including colour, sculpture, and angulation of the body whorl. Both *Haurakia* and *Powellisetia* include species that will possibly need generic separation when more information is available.

Powellisetia is named for Dr. A. W. B. Powell, whose work has made the New Zealand rissoid fauna one of the best known in the world.

Powellisetia porcellana (Suter). Pl. 12, figs. 1, 2; Pl. 14, figs. 3-6.

1908 *Rissoa porcellana* Suter, Proc. Mal. Soc. Lond. 8, p. 30, pl. 2, fig. 29.
1908 *Rissoa stewartiana* Suter, Proc. Mal. Soc. Lond. 8, p. 31, pl. 3, fig. 30.
1909 *Rissoa* (*Setia*) *porcellana* Suter; Suter, Subantarctic Islands N.Z., 1, p. 18.
1913 *Rissoa* (*Setia*) *porcellana* Suter; Suter, Man. N.Z. Moll. p. 215, pl. 13, fig. 2.
1915 *Notosetia porcellana* (Suter); Iredale, Trans. N.Z. Inst. 47, p. 454.

1955 *Notosetia porcellana* (Suter); Powell, D.S.I.R., Cape Exped. Series, Bull. 15, p. 85.
1955 *Notosetia convexispira* Powell, D.S.I.R., Cape Exped. Series, Bull 15, p. 88, pl. 3, fig. 22.
1959 *Notosetia porcellana* (Suter); Boreham, N.Z. Geol. Surv. Pal. Bull. 30, p. 36 (Lectotype).
1959 *Notosetia stewartiana* (Suter); Boreham, N.Z. Geol. Surv. Pal. Bull. 30, p. 36 (Lectotype).
1962 *Notosetia porcellana* (Suter); Smith (in part), Rec. Dom. Mus. 4 (5), p. 57, figs. 21, 22.

The typical shell of *porcellana* is inflated, smooth, thin and transparent when fresh, with no sculpture except for weak, vertical, growth lines and often a few, subobsolete, spiral scratches. The protoconch is slightly tilted while the adult whorls are convex and often shouldered. Dead shells are white but fresh shells are transparent, the brownish visceral mass being visible through the shell. The peristome is rather thin, but there is usually a fairly strong varix just behind the outer lip, and a distinct posterior sinus is present. There is a fair amount of variation in the size, the outline of the whorls, and the height of the spire.

Smith (1962) synonymised *N. stewartiana* with *P. porcellana* on the basis of the similarity of the lectotypes which she figured. Examination of Suter's second cotype of *N. stewartiana* (see Boreham 1959) shows that it too is *N. porcellana,* thus leaving no doubt of the synonymy. The paralectotypes include two other species, *P. subtenuis* (Powell), and *P. tenuisculpta* (Powell). *Dardanula convexispira* (Powell) (fig. 6) is identical with *P. porcellana*. Paratypes of *convexispira* include several specimens of a new species and genus superficially similar to *Dardanula* but belonging to a new family (see Ponder, —c.)

Animal: (Stewart Island). Unpigmented externally, but other details not known. (Dried specimens).

Operculum: (Pl. 1, fig. 2). Thin, yellowish, horny, transparent, with a large nucleus. A concave area forms a weak ridge on underside which runs parallel to columella edge. Marginal area broad.

Radula: (Pl. 1, fig. 1). Central with two lateral processes and two short processes internal to these; main cusp small, about 8 fine denticles on either side of the cuspate part of tooth forming a triangle. Lateral with small cusp, no denticles internal to it, about 15 minute serrations externally, outer portion elongate not serrate. Marginal simple, no serrations visible, elongate.

Lectotype: Snares Island, 50 fathoms (G.S.).
Height 1.8 mm. Width 1.3 mm. (from Suter)

Material Examined:

Paratypes; 72 fathoms off Cape Saunders, Otago, Laws Coll. (A.M.); 60 fathoms, off Otago Heads, Finlay Coll. (A.M.); 50 fathoms, 10 miles E.N.E. off Otago Heads, Finlay Coll. (Powell Coll.); B.S. 190, 45° 45.4' S., 171° 5' E., East Otago Coast in Canyon B., 300 fathoms, M.V. "Alert", 16/8/55 (D.M.); Paterson Inlet, Stewart Island, 10 fathoms, on algae, -/4/50 (Smith Coll.); 3 fathoms off West end of Ulva Island, Paterson Inlet, 28/8/58 (Smith Coll.); off Port William, Stewart Island, 25 fathoms, -/6/59 (Smith Coll.); just off Weka Reef, Port Adventure, Stewart Island, -/2/63, A. Pollock (Smith Coll.); 50 fathoms, Snares Island, Finlay Coll. (A.M.); 50 fathoms, Snares Island (holotype and some paratypes of *Dardanula convexispira*) (A.M. and Powell Coll.); 100 fathoms off

Puysegur Point, South West Otago (Powell Coll.); B.S. 137, off Passage Point, Dusky Sound, 12-15 fathoms, M.V. "Alert", W. H. Dawbin, 8/1/52 (D.M.); B.S. 107, Gaol Passage, Doubtful Sound, M.V. "Alert", W. H. Dawbin, 25 fathoms, 8/5/50 (D.M.); 25 fathoms, Doubtful Sound (Gardner Coll.); Bligh Sound, 25 fathoms, M.V. "Alert", W. H. Dawbin, 10/5/50 (D.M.).

Distribution: In moderately deep water off the South of the South Island, Stewart Island and the Snares Islands.

Powellisetia bilirata n. sp. Plate 14, fig. 17.

Shell minute, small for genus, rather solid, semi-transparent, strongly spirally striate, yellowish brown. Whorls 4, convex, angled by a strong spiral cord in middle of whorl; protoconch of $1\frac{1}{2}$ whorls, finely spirally striate, transparent, apex slightly inrolled. Body whorl rather large, periphery and base rounded. Aperture relatively small, solid, oval angled above; inner lip and columella moderately thickened, concave, columella separated from base below; outer lip weakly channelled above and below, sharp edged, a weak varix behind, and slightly thickened internally. Sculpture of fine, but distinct and regular, spiral threads, the suprasutural and middle cord strong, raised, rather sharp, the latter forming an angle on the whorls, the former being continued over periphery as a strong cord. About 6 fine spirals above, and 6 below middle cord on penultimate, about 16 on base, but these numbers vary slightly in paratypes. Strong cords constant, sometimes disappear over last part of body whorl, but usually continuous. Umbilical chink present but no true umbilicus. Colour pale yellowish-brown, protoconch reddish-brown. Animal, operculum and radula unknown.

Holotype: MacGregor's Bay, Whangarei Heads, shell sand, 9/4/55 (ex Hipkins Coll.) (A.M.).

Height 1.05 mm. Width 0.675 mm.

Paratypes: Auckland Dominion and Canterbury Museums, Geological Survey, Lower Hutt, and K. Hipkins Coll.

Material Examined:

Holotype and paratypes; Spirits Bay, shell sand (Hipkins Coll.); 12 fathoms, Doubtless Bay, Finlay Coll. (A.M.); Taupo Bay, Whangaroa, 2/1/54 (Hipkins Coll.); MacGregor's Bay, shell sand (Hipkins Coll.); off Mayor Island, in fish stomach contents, G. Williams (Powell Coll.).

Powellisetia crassilabrum (Powell). Plate 14, figs. 20, 20a.

1940 *Notosetia crassilabrum*, Powell, Trans. Roy. Soc. N.Z. 70, p. 228, pl. 30, fig. 12.

This species is easily distinguished by the short spire, the much inflated body whorl, and the aperture which is very much thickened internally. The varix is wide and not very strong. The shell has no sculpture, is white and rather thin, and its protoconch is slightly tilted.

This species is closely related to *P. porcellanoides* (Powell) and to *P. unicarinata* (Powell). Animal, operculum and radula unknown.

Holotype: (Figs. 20, 20a). Tom Bowling Bay in shell sand (A.M.).

Height 1.1 mm. Width 0.9 mm.

Material Examined:

Holotype and paratypes; Spirits Bay, 1949 (Hipkins Coll.); MacGregor's Bay, Whangarei Heads, shell sand, 9/5/55 (Hipkins Coll.).

Distribution: Far North of the North Island.

Powellisetia gradata (Suter). Plate 13, figs. 9-13.

1908 *Anabathron gradatum* Suter, Proc. Mal. Soc. Lond. Vol., 8, p. 32, pl. 3, fig. 33.
1913 *Anabathron gradatum* Suter; Suter, Man. N.Z. Moll. p. 218, pl. 13, fig. 7.
1915 *Notosetia? gradatum* (Suter); Iredale, Trans. N.Z. Inst., 47, p. 454.
1933 *Notosetia gradata* (Suter); Powell, Rec. Cant. Mus. 4, p. 36, text fig. 2, (Lectotype).
1933 *Notosetia fairchildi* Powell, Rec. Cant. Mus. 4, p. 36, text fig. 3.
1955 *Notosetia gradata* (Suter); Powell, D.S.I.R., Cape Exped. Series Bull., 15, p. 55.
1962 *Notosetia gradata* (Suter); Smith Rec. Dom. Mus. 4 (5), p. 53.

This species has a rather thick shell, typically with quadrate outlines to the whorls. It is white, with fine but distinct spiral striae over the whole surface. The strength of these striae varies considerably in different specimens, but they are usually stronger on the shoulder and the base. The axial growth lines are also rather distinct. There is a weak varix and the aperture is considerably thickened internally. A shallow umbilical chink is present. Even in one population there is considerable variation in the shell size, the strength of the shoulder and the height of the spire (c.f. figs. 9-13). Bounty Island specimens usually have rounded shoulders (Powell's *N. fairchildi* (figs. 10, 10a)), but agree with *P. gradata* in all other details, suggesting a possible subspecific race if it were not that occasional typical *P. gradata* are found at the Bounty Islands. An intermediate series of shells from 72 fathoms off Cape Saunders, suggests that the Bounty Island form is only a regional variation. Animal, operculum and radula unknown.

Lectotype: 50 fathoms off the Snares Islands (Geol. Surv.).
Height 2.1 mm. Width 1.3 mm. (from Powell)

Material Examined:

Paralectotypes; 72 fathoms, off Cape Saunders, Laws Coll. (A.M.); 30 fathoms, off Halfmoon Bay, Stewart Island, -/10/51 (Smith Coll.; 50 fathoms, off the Snares Islands, Finlay Coll. (A.M.) and H. Suter (D.M.) (syntypes); Bounty Islands, 170 fathoms, Capt. Fairchild (A.M.) (Holotype of *N. fairchildi*); off Bounty Islands (Powell Coll.); 170 fathoms, Bounty Islands (Powell Coll.).

Distribution: The South-East of the South Island, Stewart Island, the Snares and Bounty Islands in deep water.

Powellisetia lineata (Smith). Plate 14, figs. 16, 16a.

1962 *Notosetia lineata* Smith, Rec. Dom. Mus. 4 (5), p. 55, fig. 13.

The shell has a rather short spire, convex whorls, and is yellowish, with 3 chestnut bands on the spire whorls and 1-2 on the base. Very indistinct spiral striae are present on the shell surface. The aperture has a very weak posterior sinus, no varix and is only slightly thickened internally.

Animal: (paratype): Unpigmented externally, with moderately long, slightly flattened, and not noticeably club-like, tentacles; snout rather wide, bilobed; eyes fairly large. Penis long and narrow, muscular, straight; terminal portion flattened, club-like and glandular, this having a long finger-like process on one side and a much shorter projection on the other (dried material). Radula unknown.

Operculum: Typical. Central part of the large nucleus slightly thickened.

Holotype: Halfmoon Bay, Stewart Island, low tide, on algae (D.M.).
Height 1.41 mm. Width 0.96 mm. (from Smith)

Material Examined:

Paratypes; Bathing Beach, Stewart Island, O. Allan (D.M.); Aker's Point, Halfmoon Bay, Stewart Island, M. Spong, 22/2/63 (W.F.P.).

Distribution: Stewart Island, living in algae at low tide.

Powellisetia microstriata (Murdoch). Plate 14, figs. 1, 2.

1905 *Rissoa microstriata* Murdoch, Trans. N.Z. Inst., 37, p. 229, pl. 7, fig. 25.
1913 *Rissoa (Setia) microstriata* Murdoch; Suter, Man. N.Z. Moll., p. 214, pl. 12, fig. 25.
1915 *Notosetia microstriata* (Murdoch); Iredale, Trans. N.Z. Inst. Vol., 47, p. 454,
1955 *Notosetia antipoda* Powell, D.S.I.R. Cape Exped. Series Bull. 15, p. 86, pl. 3, fig. 19.
1962 *Notosetia microstriata* (Murdoch); Smith, Rec. Dom. Mus. 4 (5), p. 56, figs. 14, 15.

This species has a rather tall-spired shell, with 4½-5 moderately convex whorls. The very fine spiral sculpture appears to be in the shell substance rather than as ornament on the surface, and is therefore only visible in semi-transparent shells. There is a very weak apertural varix in most specimens, a little internal thickening, a broad posterior sinus, and no umbilicus. The protoconch looks smooth, but very fine spirals are visible under high power. There is some variation, chiefly in size.

Smith (1962) finally settled the correct location of this species by showing that the type, supposed to have come from Whangaroa Harbour, probably came from Foveaux Strait. I have checked the type against Smith's specimens and agree entirely with her conclusion.

The holotype of *Notosetia antipoda* Powell, (fig. 2) is a dead opaque shell with the spiral sculpture invisible on the body whorl, but visible on the spire whorls. It is identical with Foveaux Strait specimens of *P. microstriata.*

Animal: (Stewart Island). Unpigmented externally, tentacles moderately long, eyes large, but no other details known. (Dried material). Radula unknown.

Operculum: Thin, transparent, colourless, slightly concave, no sign of spiral sculpture. Nucleus a little smaller than in other members of genus, of two revolutions. Marginal area moderately wide, columella edge rather convex, right end rounded, growth lines strong.

Holotype: Foveaux Strait ("Whangaroa Harbour") (D.M.).
Height 2.07 mm. Width 1.11 mm. (from Smith)

Material Examined:

Holotype; 50 fathoms, 6 miles E.N.E. of Otago Heads, Finlay Coll. (A.M.); 75 fathoms, Cape Saunders, Otago, Laws Coll. (A.M.); Bluff, Finlay Coll. (A.M.); Foveaux Strait, oyster beds near Fairchild River, 28/9/55 (Smith Coll.); off Stewart Island, -/3/51 (Gardner Coll.); Bathing Beach, Stewart Island, O. Allan, 1950 (D.M.); Port Adventure, Stewart Island, 30 fathoms, -/5/47 (Smith Coll. and Powell Coll.); off Halfmoon Bay, Stewart Island, 30 fathoms (Smith Coll.); 30 fathoms, off South Cape, Stewart Island, E. Smith (Powell Coll.); off Big South Cape Islands, Stewart Island, 40 fathoms, 10/4/54 (Smith Coll.); B.S. 106, between Unnamed Island and Breaksea Sound, 20 fathoms, M.V. "Alert", W. H. Dawbin, 7/5/50 (D.M.); 50 fathoms, Snares Islands, (holotype and paratypes of *N. antipoda*); Bounty Islands, 170 fathoms (Powell Coll.) (among paratypes of *N. fairchildi*).

Distribution: Moderately deep water off the South of the South Island, Stewart Island and the Snares and Bounty Islands.

Powellisetia porcellanoides (Powell). Pl. 12, fig. 6; Pl. 14, figs. 22, a, b.

1937 *Notosetia porcellanoides* Powell, Disc. Rep. 15, p. 200, pl. 53, fig. 9.

The shell is rather small, with a fairly tall spire, and lightly convex whorls. It has a few spiral scratches on the surface when fresh, but these are easily worn off like those on the one available paratype. The protoconch is large, smooth, and strongly tilted. A moderate varix and a very weak posterior sinus are present. There is some variation in the size and in the convexity of the whorls.

Animal: (Off Mayor Island). Yellowish externally with a bilobed, moderately long snout which is apparently slightly expanded in front. Tentacles fairly long, eyes large on swellings at outer bases. (Dried specimens).

Operculum: (Pl. 1, fig. 3). Thin, colourless, transparent, slightly concave, with a wide nucleus of about two spirals. There is faint spiral sculpture visible and a single, faint, wide spiral line over the last $1\frac{1}{2}$ revolutions; growth lines strong. Marginal area fairly wide, thin. Columella edge slightly convex, right end rather pointed.

Radula: Central tooth with a small cusp and traces of minute serrations on either side. Lateral with one main cusp and a smaller one internal to it, no others visible, typical shape for genus. Marginals typical in shape and no serrations visible. The extremely small size of the teeth make it difficult to be sure whether or not fine serrations do occur.

Holotype: Off Three Kings Islands Discovery II Stat. 933, 260 metres. (Brit. Mus.).

Height 1.35 mm. Width 0.88 mm. (from Powell)

Material Examined:

Paratype (Powell Coll.); 50 fathoms, between Cape Maria Island and Three Kings Islands, 1961 (Hipkins Coll.); Spirits Bay, shell sand (Hipkins Coll.); Taupo Bay, Whangaroa, 2/1/54 (Hipkins Coll.); Tapeka Point, Russell, -/1/52 (Hipkins Coll.); MacGregor's Bay, Whangarei Heads, shell sand, 9/4/55 (Hipkins Coll.); Tryphena Bay, Great Barrier Island, -/1/52 (Hipkins Coll.); 35 fathoms, Tuhua Reef, Mayor Island, G. Williams (Powell Coll.).

Distribution: In moderately deep to shallow water off the far North and North East of the North Island.

Powellisetia c.f. porcellanoides (Powell). Plate 14, fig. 21, 21a.

A few specimens examined have moderately strong spiral striations over the entire shell. There are also small differences in the shell shape and the convexity of the whorls.

Material Examined:

12 fathoms, Awanui Bay, Finlay Coll. (A.M.); Mt. Maunganui-Mayor Island area in fish stomach contents, G. Williams (Powell Coll.).

Powellisetia retusa (Powell). Plate 2, figs. 7, 8.

1927 *Notosetia retusa* Powell, Rec. Cant. Mus., Vol. 3 (2), p. 17, pl. 21, fig. 3.
1962 *Notosetia retusa* Powell; Smith, Rec. Dom. Mus., 4 (5), p. 59.

This shell is distinctive, with its shining surface, tall spire, rather pupoid form, rounded whorls, and rather distinct posterior sinus. There is no umbilicus, and indistinct irregular spiral striae are developed over the surface. There is a weak varix and the aperture is thickened within. The holotype is a squatter shell than normal, and a taller paratype is figured for comparison (fig. 8). Though related to *P. gradata* (Suter), this species shows also affinities with *P. microstriata* (Murdoch).

Animal: (Snares Islands, 50 fathoms). Unpigmented externally, with long cephalic tentacles. (Dried specimens). Radula unknown.

Operculum: Thin, slightly concave, colourless, nucleus rather wide, about two revolutions, growth lines weak, marginal area wide, right end bluntly angled, columella edge rounded. One or two weak spiral lines emerge from the nucleus.

Holotype: (Figs. 7, 7a). 170 fathoms, off Puysegur Point, -/12/08 (Cant. Mus.).

Height 1.825 mm. Width 1.05 mm.

Material Examined:

Holotype and paratypes; 60 fathoms, off Otago Heads, Finlay Coll. (A.M.); 72 fathoms, off Cape Saunders, Laws Coll. (A.M.); Middle Grounds, Foveaux Strait, 15-30 fathoms, -/6/51 (D.M.); South Cape, Stewart Island, -/1/55 (Gardner Coll.); 85 fathoms, Enderby Island, Finlay Coll. (A.M.); 100 fathoms, off Puysegur Point (D.M.); B.S. 104, Chalky Inlet, 20 fathoms, M.V. "Alert", W. H. Dawbin, 6/5/50 (D.M.); 50 fathoms, off Snares Islands, Finlay Coll. (A.M.) and H. Suter (D.M.); 95 fathoms, Auckland Islands, Finlay Coll. (A.M. and Powell Coll.); 50 fathoms, off Bounty Islands, Finlay Coll. (A.M.), 170 fathoms (Powell Coll.), 40-50 fathoms (D.M.) and 40 fathoms, J. A. Bollons (D.M.); Bounty Islands (D.M.); Chatham Island Exped. Stat. 34, 44° 04' S., 175° 23.5' E., East of Forty-fours, 130 fathoms, 1/2/54, M.V. "Alert" (D.M.).

Distribution: The South of the South Island, Stewart Island, Snares, Auckland, Bounty and Chatham Islands, in fairly deep water.

Powellisetia subgradata (Powell). Plate 13, fig. 14.

1937 *Notosetia subgradata* Powell, Disc. Rep. 15, p. 200, pl. 53, fig. 10.

The shell is small, and the whorls have a strongly angled shoulder which is often carinate. On the shoulder very fine, close spirals are present in the paratypes, though these are not mentioned in Powell's description of the holotype. The spire is short and the protoconch large, dome-shaped, slightly tilted and apparently smooth. There is a very weak basal canal and a rather weak posterior canal between the shoulder and the suture. The aperture is thickened internally but there is no varix. The shoulder and carina vary somewhat in strength, most specimens other than the paratypes having no carina, and some having the shoulder bluntly rounded.

Animal: (Off Mayor Island). Unpigmented, other details not known (dried material).

Operculum: Typical of the genus. Oval, with a wide nucleus, broad marginal area, and slightly convex columella edge.

Radula: Typical of the genus, the fine serrations being almost invisible because of its small size.

Holotype: Disc. Stat. 933, off Three Kings Islands, 260 metres (Brit. Mus.).

Height 1.7 mm. Width 1.1 mm. (from Powell)

Material Examined:

Paratypes (Powell Coll.); Spirits Bay, shell sand (Hipkins Coll.); Tom Bowling Bay, -/1/52 (Gardner Coll.); 4½ fathoms off Reach Island, Whangaroa, 5/1/56 (W.F.P.); Taupo Bay, Whangaroa, 2/1/54 (Hipkins Coll.); Tapeka Point, Russell (Hipkins Coll.); Tryphena, Great Barrier Island, 5-6 fathoms (Powell Coll.); Tryphena, Great Barrier Island (Hipkins Coll.); 35 fathoms, Tuhua Reef, Mayor Island, in fish stomach contents, G. Williams (Powell Coll.).

Distribution: The far North and North East of the North Island in shallow to moderately deep water.

Powellisetia subtenuis (Powell). Pl. 12, figs. 4, 5, 9; Pl. 14, figs. 7-15.

1937 *Notosetia subtenuis* Powell, Disc. Rep. 15, p. 200, pl. 53, fig. 8.
1940 *Notosetia multilirata* Powell, Trans. Roy. Soc. N.Z., 70, p. 228, pl. 31, fig. 10.
1940 *Notosetia subcarinata* Powell, Trans. Roy. Soc. N.Z., 70, p. 228, pl. 30, fig. 11.
1962 *Notosetia foveauxana* Smith, Rec. Dom. Mus., 4 (5), p. 53, fig. 9.
1962 *Notosetia porcellana* (Suter); Smith (in part), Rec. Dom. Mus., 4 (5), pp. 57-59, fig. 20.
1962 *Notosetia tenuisculpta* Powell; Smith (not of Powell); Rec. Dom. Mus., 4 (5), p. 59, fig. 23.

This "species" is represented throughout New Zealand by what appears to be a series of complexly variable populations. Several names have been given to shells which, when series from other localities are examined, appear to intergrade with other forms. Smith lumped the most common Stewart Island form (figs. 8, 8a) with *P. porcellana*, but *P. subtenuis* is always separable by its lightly convex whorls, fine spiral lirae, and smaller size.

The shell is umbilicate and usually white, but can be coloured uniform brown or brown with a peripheral white band (fig. 10) (= *tenuisculpta* of Smith). The aperture has a varix and a moderate posterior canal. The protoconch is often finely spirally striate. The height of the spire is rather variable, shortening of this being coupled with inflation of the body whorl, which occurs in populations in the far North, and has been given a separate name (*multilirata* Powell) (fig. 13). *P. foveauxana* Smith, (fig. 11) is the southern equivalent but other forms occur also (fig. 12).

Shells from the far North show much variation. Series from Doubtless Bay and 100 fathoms off Big King Island, Three Kings Group, (A.M. Coll.), show intergrading shells between typical *subtenuis*, shells very close to Stewart Island *subtenuis* (pl. 3, fig. 9), *multilirata* and *subcarinata* Powell (figs. 15, 15a) and in view of this intergradation, these are all considered as belonging to the one species. The synonymy of *N. subcarinata* is perplexing but is based on a series of strongly-angled and even carinate shells having fine spiral sculpture as in *multilirata* (fig. 14) merging into keeled shells identical with typical *subcarinata* (i.e. with no spiral sculpture). On the available evidence I consider the above course of action best but it is quite possible that better series of shells, coupled with information obtained from examination of the animal, will re-establish some of the above names and, perhaps, further species.

A form, with strong granulated spirals on an oblique protoconch, is found at the Bounty Islands, but insufficient material is available to determine its status with certainty. A single shell from the Bounty Islands was, however, typical *subtenuis.*

Animal: (Portobello) (Pl. 1, fig. 9). Externally white, the dark viscera showing through the semi-transparent shell. Snout narrow, bilobed, not expanded, with a slight yellowish tinge; buccal mass bright yellow. Cephalic tentacles long, with slightly swollen outer ends, covered with stationary, short cilia. Eyes large, with a yellow glandular area above and behind. Foot wide in front, slightly dented in the anterior margin, tapering gradually behind to a sharp posterior end. Dorsal and ventral surfaces with posteriorly directed cilia, these cilia longer and more active in a strip under the anterior margin. Propodium small and rather far back from the anterior edge. Anterior mucous gland large, posterior gland with a short central slit. No metapodial tentacle. Opercular muscle bright yellow. Osphradium large, light brown. Stomach (a specimen from off Mayor Island) containing fairly large foraminifera, and a crystalline style present.

Operculum: (Fig. 5) (Stewart Island, Mayor Island). Colourless, very thin, very lightly concave with a wide nucleus, this region being the centre of concavity, and is of about two revolutions. Faint, fine, spiral lines visible but growth lines fairly prominent. A rather broad marginal area on outer side. Columella edge rather convex, right end slightly pointed.

Radula: (Fig. 4). Rather short and broad. Central moderately large, cutting edge triangular, 8-1-8, cusps small, denticulate. Lateral with 1 large cusp, finely serrate on outer side. Inner marginal curved, finely serrate; outer marginal appears to be smooth, otherwise similar to inner.

Holotype: Discovery II Stat. 933, off Three Kings Islands, 260 metres (Brit. Mus.).

Height 1.2 mm. Width 0.8 mm. (from Powell)

Material Examined:

Paratypes (Powell Coll.); 100 fathoms, off Great Island, Three Kings Islands, Finlay Coll. (including holotypes and paratypes of *N. multilirata* and *N. subcarinata*) (A.M.); 50 fathoms, between Cape Maria Island and Three Kings 1961 (Hipkins Coll.); off North Cape, 75 fathoms (D.M.); Spirits Bay, shell sand (Hipkins Coll.); 12 fathoms, Awanui Bay, Finlay Coll. (A.M.) and 10 fathoms, Finlay Coll. (A.M.); 10-12 fathoms, off Manganui, W. LaRoche 1928 (Powell Coll.); 60 fathoms, off the Poor Knights Islands, Finlay Coll. (A.M.); 12 fathoms, Doubtless Bay, Finlay Coll. (A.M.); 38 fathoms, Cuvier Island, Finlay Coll. (A.M.); 25 fathoms, off Hen and Chickens, Finlay Coll. (A.M.); 42 fathoms, 1 mile South of Chicken Island, Hen and Chickens Islands, 5/12/16 (Powell Coll.); MacGregor's Bay, Whangarei Heads, shell sand, 9/4/55 (Hipkins Coll.); off High Island, Taurikura Bay, Whangarei Heads, 1-5 fathoms, 18/5/61 (W.F.P.); Tryphena Bay, Great Barrier Island, 5-6 fathoms (Powell Coll.); Dredge 5, Manukau Harbour, 4½ fathoms, between Cornwallis and Big Muddy Creek (Powell Coll.); 3 miles N.E. of Channel Island, Hauraki Gulf, 26 fathoms, 1/12/16 Capt. Bollons (D.M.); 20 fathoms, 5 miles North of Mount Maunganui, fish stomach contents, G. Williams (Powell Coll.); 90 fathoms, ½ mile off N.E. end of Mayor Island, fish stomach contents, G. Williams (Powell Coll.); Island Bay, Wellington, shell sand, 2/10/56 (W.F.P.); B.S. 190, 45° 45.4' S., 171° 5' E., off East Otago Coast, Canyon B., 300 fathoms, M.V. "Alert", 16/8/55 (D.M.); 50 fathoms off Oamaru, Finlay Coll. (A.M.); Taieri Beach, Otago, algae, Finlay Coll. (A.M.); 60 fathoms, off Otago Heads, Finlay Coll. (A.M.); 50 fathoms, 10 miles E.N.E. of Otago Heads, Finlay Coll. (Powell Coll.); 72 fathoms, off Cape Saunders, Otago, Laws Coll. (A.M.); Bluff, Finlay Coll. (A.M.); Stewart Island, 18 fathoms, H. Suter (D.M.); off Solander's Island, algae, -/11/56 (Smith Coll.); East of Ruggedy, Stewart Island, 25 fathoms, 4/11/56 (Smith Coll.); off Port William, 25 fathoms, -/6/59 (Smith Coll.); Chew Tobacco Grounds, near East Cape, Stewart Island, O. Allan, -/3/51 (D.M.); 18 fathoms, Port Pegasus, Stewart Island (among paralectotypes of *N. stewartiana*) (Geol. Surv. D.M. and Powell Coll.); Port Adventure, Stewart Island, in bryozoan, 18/6/58 (Smith Coll.), (= *tenuisculpta* of Smith); Ocean Beach, Stewart Island, low tide, algae, 28/12/52 (Smith Coll.) (= *tenuisculpta* of Smith); off Poutama Island, South Cape, Stewart Island, 30 fathoms (paratypes of *N. foveauxana* and also *tenuisculpta* of Smith) (Smith Coll. and D.M.); 100 fathoms, off Puysegur Point, South West Otago (D.M.); B.S. 107, Goal Passage, Doubtful Sound, 25 fathoms, M.V. "Alert", W. H. Dawbin, 8/5/50 (D.M.); Doubtful Sound, 50 fathoms (W.F.P.); B.S. 185, Casewell Sound, 10 fathoms, R. K. Dell, 23/3/49 (D.M.); 50 fathoms, off Snares Islands (A.M. and Powell Coll.); Campbell Island, Cape Exped., R. Sorensen, 1943 (A.M.); (c.f.) Bounty Islands (Powell Coll.); (c.f.) Bounty Islands, 40 fathoms, J. A. Bollons (D.M.); Bounty Islands (Powell Coll.); 95 fathoms, Auckland Island, Finlay Coll. (A.M.); Mernoo Bank, 43° 21' S., 124° E., 52 fathoms (D.M.); Chatham Islands Exped. Stat. 34, 44° 04' S., 175° 23.5' E., East of the Forty-fours, 130 fathoms, M.V. "Alert" (D.M.); Discovery Bank, 140 metres, R.R.S. Discovery II Stat. 2772, 1/12/50 (D.M.).

Distribution: Throughout New Zealand, Stewart Island, and the Snares, Bounty, Campbell, Auckland and Chatham Islands, in shallow to deep water.

Powellisetia tenuisculpta (Powell). Pl. 12, fig. 3; Pl. 14, figs. 18, 19.

1933 *Notosetia tenuisculpta* Powell, Rec. Cant. Mus. 4, p. 37, pl. 6, fig. 7.
1955 *Notosetia tenuisculpta* Powell; Powell, D.S.I.R., Cape Exped. Series, Bull., 15, p. 86.
1962 *Notosetia porcellana* (Suter); Smith (in part) (not of Suter), Rec. Dom. Mus. 4 (5), p. 57.

The shell of this species is easily distinguished by its brown protoconch, which is a feature not seen in any other southern New Zealand species of this genus. The adult whorls are yellowish to white. The spire is moderately tall, the whorls convex, and the whole shell usually sculptured with fine close spirals, although these may sometimes be fairly strongly developed and crossed by weak, but distinct, axial growth lines. The aperture has no varix or internal thickening, but a very weak posterior canal is present. The umbilicus is variably developed, and occasionally absent. Fresh shells are semi-transparent, with the spiral sculpture clearly visible. Dead specimens become opaque and the sculpture is easily worn off. There is variation in the shell size, the relative width, and the size of the umbilicus.

Specimens of *tenuisculpta* from Stewart Island were included in the range of variation of *P. porcellana* by Smith (1962) along with *P. subtenuis,* while she recognised a form of *subtenuis* as *tenuisculpta.* Stewart Island shells of *tenuisculpta* (fig. 19) are often a little larger than the type series, but agree well in other particulars. This species is easily distinguished from *subtenuis,* to which it is closely related, by the points mentioned above, and by the relatively taller spire and the rather more convex whorls.

Animal: (Pegasus, Stewart Island). Not pigmented externally but other details not known. (Dried material).

Operculum: (Stewart Island). Typical; thin, yellowish, transparent, slightly concave, nucleus large, slightly thickened in centre.

Radula: (Fig. 3). Similar to *P. subtenuis,* but with fewer denticles (about 6) beside main cusp on central tooth. Marginals appear to be smooth, though they may be very finely serrate.

Holotype: (Figs. 18, 18a). 170 fathoms, off Bounty Islands, 1/6/53 (Cant. Mus.).

Height 1.25 mm. Width 0.75 mm.

Material Examined:

Holotype and paratypes; off Port William, Stewart Island, 25 fathoms, -/6/59 (Smith Coll.); Port Pegasus, Stewart Island, 28/7/59 (Smith Coll.); East of Ruggedy, Stewart Island, 25 fathoms, 4/11/56 (Smith Coll.); off Pontama, South Cape, Stewart Island, 30 fathoms (Smith Coll.); off Puysegur Point, South West Otago, 100 fathoms (D.M.); Doubtful Sound, 50 fathoms (W.F.P.); Bounty Islands (Powell Coll. and D.M.) and 50 fathoms, Finlay Coll. (A.M.).

Distribution: The extreme South of the South Island, Stewart Island and the Bounty Islands, in moderately deep water.

Powellisetia unicarinata (Powell). Plate 14, fig. 23, 23a.

1930 *Notosetia unicarinata* Powell, Trans. N.Z. Inst., 61, p. 543, pl. 88, fig. 18.

This small species is closely allied to *P. porcellanoides* (Powell), but differs from that species in its strongly angled, carinate shoulder on all adult whorls. Like *P. porcellanoides,* the shell has a fairly tall spire and strongly tilted protoconch. The type is worn, fresh specimens having traces of spiral scratches on the adult whorls, and a few very faint spirals on the protoconch. Sometimes a weak spiral cord, emerging from the suture, is developed on the base. The umbilicus is usually open. The aperture has a very weak posterior sinus and a weak external varix. The chief variation is in the relative width of the spire.

Animal: (Mayor Island). Unpigmented externally but other details unknown. (Dried material).

Operculum: Colourless, nucleus very slightly thickened and rather wide. Growth lines fairly strong, marginal area fairly narrow.

Radula: Similar to that of P. *porcellanoides.*

Holotype: (Figs. 23, 23a). Tryphena Bay, 5-6 fathoms, Great Barrier Island(Powell Coll.).

Height 1.1 mm. Width 0.7 mm.

Material Examined:

Holotype and paratypes; 5 fathoms, between Cape Maria Island and mainland, -/6/62 (Hipkins Coll. and Gardner Coll.); Spirits Bay, 1949 (Hipkins Coll.); 22 fathoms, ½ mile South of Stephenson's Island, off Whangaroa (Hipkins Coll.); Taupo Bay, Whangaroa, 2/1/54 (Hipkins Coll.); MacGregor's Bay, Whangarei Heads, shell sand, 9/4/55 (Hipkins Coll.); 35 fathoms, Tuhua Reef, Mayor Island, in fish stomach contents, G. Williams (Powell Coll.).

Distribution: The far North and North East of the North Island, in shallow to moderately deep water.

RISSOPSIS Garrett, 1873

Type (monotypy): *R. typica* Garrett, 1873

Cotton (1944) used the New Zealand genus *Eusetia* Powell to cover the Australian species previously referred to as *Rissopsis,* but later authors reverted to the earlier generic name. *Eusetia expansa* (Powell), the type of *Eusetia*, is a pyramidellid and therefore this genus is not applicable in the Rissoidae.

Cotton describes *Rissopsis typica* Garrett as "a most peculiar species from Viti and Samoa Islands, which is a long exsert shell with constricted and abnormally narrow whorls with a tendency to oblique, twisted plications more or less obsolete." He goes on "the resemblance to Australian and New Zealand species is in no way apparent, the apertures here being larger, more expanded and more reflected peristome, though discontinuous."

I agree with Cotton's conclusions and provide the name *Austrorissopsis* n. gen. for the Australian species previously called *Rissopsis*, and nominate *Rissopsis brevis* May, 1919, as type. I have tentatively placed Monterosato's genus, *Peringiella*, as a subgenus of *Rissopsis*.

Subgenus **PERINGIELLA** Monterosato, 1878

Type (monotypy): *Rissoa laevis* Monterosato, 1877

The group of Southern European genera including *Peringiella* and *Pisinna* Monterosato are poorly known. Tryon (1887, p. 341) discussed the type of *Peringiella* as follows:— "The only description of this species is its solidity and the teeth of the aperture readily distinguished it from its congeners. The figure does not exhibit any apertural teeth". Cossmann (1921) gives *P. nitida* Brusina from the Mediterranean, as the type of *Peringiella*. This species only superficially resembles *P. laevis*, having a rather different aperture with no apertural teeth. *P. nitida* closely resembles a new species from New Zealand, described below. *Peringiella* is used here provisionally to cover certain New Zealand species, though examination of the type will probably indicate a new texon is required.

Coan (1964) has reduced *Peringiella* to a subgenus of *Cingula*. The shells of the smooth "cingulids" differ markedly from those of true *Cingula*, and deserve generic separation.

"Notosetia" lubrica (Suter) and *"N." simplex* Powell, are also placed tentatively in *Peringiella*, though not agreeing so well with *P. nitida*.

The one species, for which the details of the radula and operculum are known, shows that this group is related to *Powellisetia*, but differs in certain details. These are:—

Operculum: Marginal area wide, ragged, nucleus rather small.

Radula: Central with basal processes extended laterally. Lateral with a very long outer portion. Both central and lateral have relatively fewer cusps than species of *Powellisetia*, central 3 + 1 + 3, lateral 0 + 1 + 8.

The shell is distinctively tall, smooth, with a large, smooth, dome-shaped protoconch. The description of the new species can be taken as typical of the group.

Rissopsis (Peringiella) elegans n. sp. **Pl. 12, figs. 7, 8; Pl. 13, figs. 3, 3a.**

Shell ovate—conic, white, shining, semi-transparent, false margined, with no sculpture. Spire tall, outline faintly convex, whorls 5, slightly convex, suture false margined below. Protoconch large, 1½ whorls, dome-shaped, smooth. Aperture large, pyriform, angled posteriorly where there is a fairly distinct posterior sinus, rounded below. Columella concave, inner lip thin. Peristome continuous, not much thickened. A weak external varix close behind the sharp outer lip which is thickened a little internally. No umbilicus, but columella departs from body wall slightly.

Animal: (Paratype). Yellowish-white externally, with broad, flat, short cephalic tentacles, which have minute eyes at their outer bases. The eyes have a white glandular area surrounding them. Snout broad, bilobed. (Dried material).

Operculum: (Fig. 8). Thin, yellowish, transparent with a small indistinct nucleus, the central part of which is irregularly thickened to a small extent. Columella edge lightly convex, growth lines moderately strong. Marginal area thin, brown, distinct, the edges tatered.

Radula: (Fig. 7). Central rather small, cusps 3 + 1 + 3, small, two latero-basal processes and a pair of basal knobs. Lateral elongate, 0 + 1 + 8, cusps small. Marginals elongate, curved, inner finely serrate, outer narrower, appears to be smooth.

Holotype: (Fig. 3, 3a). 22 fathoms, ½ mile West side of Stephenson's Island, 3½ miles from Whangaroa, K. Hipkins, 29/12/53 (ex Hipkins Coll.) (A.M.).

Height 3.1 mm. Width 2.15 mm.

Paratypes: (2) Dominion Museum, K. Hipkins Coll.

Material Examined: Holotype and paratypes.

Rissopsis (Peringiella) lubrica (Suter). **Plate 13, figs. 4-6.**

1898 *Rissoa lubrica* Suter; Proc. Mal. Soc. Lond., 3, p. 5, fig. 3.
1908 *Rissoa* (*Setia*) *lubrica* Suter; Suter, Proc. Mal. Soc. Lond., 8, p. 29, pl. 2, fig. 24.
1913 *Rissoa* (*Setia*) *lubrica* Suter; Suter, Man. N.Z. Moll., p. 213, pl. 12, fig. 23.
1924 *Notosetia pupa* Finlay, Trans. N.Z. Inst. 55, p. 488.
1927 *Notosetia benthicola* Powell, Rec. Cant. Mus. 3, p. 117, pl. 21, fig. 1.
1933 *Notosetia lubrica* (Suter); Powell, Rec. Auck. Inst. Mus., 1, p. 198, pl. 34, fig. 3.
1962 *Notosetia lubrica* (Suter); Smith, Rec. Dom. Mus. 4 (5), p. 55, figs. 16, 17, 17a.

This distinctive species has a tall spire, rather convex, sculptureless whorls which are strongly margined below the suture, a more-or-less D-shaped aperture which is strongly thickened within, and a very weak varix externally. Posteriorly there is a broad, fairly deep sinus in the outer lip and anteriorly a shallow concavity, so that the middle part of the outer lip appears to swing forward. The number of whorls varies from about 3½ to 5, and thus the adult size and relative height of the spire are rather variable (c.f. figs. 4, 5).

Smith (1962) figures the holotype of *P. lubrica* which is a rather small shell for the species, and the holotype of *P. benthicola* Powell, which she considers to be a synonym of *P. lubrica*—a conclusion with which I definitely agree. Smith also shows how *R.* (*P.*) *lubrica* possibly intergrades with *R.* (*P.*) *simplex*, but I have not seen her specimens to confirm this.

R. (*P.*) *lubrica* is placed in *Peringiella* tentatively on account of its basic similarity to *R.* (*P.*) *elegans* n. sp.

Animal, operculum and radula unknown.

Holotype: Foveaux Strait, 15 fathoms (Cant. Mus.).

Height 1.75 mm. Width 0.85 mm. (from Smith)

Material Examined:

72 fathoms, Cape Saunders, Otago, Laws Coll. (A.M.); 100 fathoms, off Puysegur Point (paratypes of *benthicola*) (Cant. Mus.) and (D.M. and Gardner Coll.); Middle Grounds, Foveaux Strait, 30 fathoms, O. Allan, -/6/51 (D.M.); Fish Rock, Foveaux Strait, 30 fathoms, O. Allan, -/6/51 (D.M.); Bathing Beach, Stewart Island (D.M.); 50 fathoms, Doubtful Sound (W.F.P.).

Distribution: The South of the South Island, and Stewart Island, in deep water.

Rissopsis (Peringiella) simplex (Powell).

1927 *Lironoba simplex* Powell, Rec. Cant. Mus., 3 (2), p. 116, pl. 21, fig. 4.
1930 *Notosetia simplex* Powell, Trans. N.Z. Inst., 61, p. 544.
1962 *Notosetia simplex* Smith, Rec. Dom. Mus. 4 (5), p. 59, figs. 18, 19.

The shell is distinctive, with its strongly angulate whorls, tall spire and smooth shell. Smith (1962) has suggested that this species intergrades with *R.* (*P.*) *lubrica* (p. 55-56 and 59). I have not seen her specimens, nor the holotype of *simplex*, but only the juvenile paratype. Smith's conclusions thus must stand for the moment, but it is clear that R. (*P.*) *simplex* is very closely allied to *R.* (*P.*) *lubrica*. Animal, operculum and radula unknown.

Holotype: Off Puysegur Point, South-West Otago, 170 fathoms (Cant. Mus.).

Height 2.0 mm. Width 0.9 mm. (from Powell)

Material Examined: Paratype.

Distribution: Far South of the South Island, and Stewart Island (Smith), in deep water.

Family CINGULOPSIDAE Fretter and Patil, 1958

(Type genus *Cingulopsis* Fretter and Patil, 1958.) (*Cingula fulgida* J. Adams, 1797) = *Helix fulgidus* J. Adams, 1797).

The anatomy of *Eatonina micans* (Webster) will be described elsewhere (Ponder,—a.) and this is shown to closely resemble the European *Cingulopsis fulgida* (Fretter, 1953, and Fretter and Patil, 1958). There are, however, at least three important differences which separate the two species. The pallial oviduct of *C. fulgida* has a ciliated duct opening into the mantle cavity, whereas this is absent in *E. micans*. A short, broad metapodial tentacle, present in *C. fulgida*, is absent in *E. micans*, and the operculum of the former species is thin and simple while that of the latter is thick and bears a peg. Possibly the characteristics of *Cingulopsis fulgida* are typical of an, as yet unidentified, Northern Hemisphere group of species, in the same way that those of *E. micans* appear to be typical of a Southern group.

Eatonia and *Cingulopsis* are here restricted in a subfamily, the Cingulopsinae, to keep them distinct from a second and apparently related group containing *Eatoniopsis* Thiele. The main characteristics of the Cingulopsinae have been fully discussed by Fretter and Patil (1958).

Subfamily **CINGULOPSINAE** Fretter and Patil, 1958, nom. transl. (ex **Cingulopsidae**).

Genus **EATONINA** Thiele, 1912

Type (monotypy): *E. pusilla* Thiele, 1912

Shell: Small, rather solid, uniform brown, banded, or spotted, whorls convex to nearly flat, apex blunt, aperture rounded, perforate or imperforate.

Animal: Cephalic tentacles, rather long, blunt, minutely setose. Posterior mucous slit extends from middle of sole to posterior end. No caudal tentacle.

Operculum: Rather thick, transparent, with a strong peg and a strong internal ridge.

Radula: Central small, not cuspate. Lateral large, 1-3 large cusps, sometimes with small denticles. Inner marginal with 0-4 cusps, outer with 1-4 cusps.

Subgenus **Eatonina**

Shell: Rather large for genus, whorls weakly convex, spire conic, aperture circular, imperforate, banded or uniform brown (type banded).

Animal: Typical of the genus. Fully described under *E.* (*E.*) *micans*.

Operculum: Oval. Muscle insertion area fairly distinct but transparent. Peg short.

Radula: Central small, with blunt processes. Lateral 1-3 large cusps (3 in type). Inner and outer marginals with 3 cusps.

Though *E. micans* differs from *E. pusilla* in a few minor radula details, these are not sufficient to warrant subgeneric distinction.

Eatonina (Eatonina) micans Webster. **Plate 15, figs. 1-4.**

1905 *Rissoa micans* Webster, Trans. N.Z. Inst. 37 (1904, 1905), p. 277, pl. 19, fig. 4.
1913 *Rissoa* (*Setia*) *micans* Webster; Suter, Man. N.Z. Moll. p. 214, pl. 12, fig. 24.
1915 *Notosetia micans* (Webster); Iredale, Trans. N.Z. Inst. 47, p. 454.

Shell rather large for genus, solid, imperforate; spire moderately tall, blunt; whorls weakly convex; protoconch smooth, flatly dome-shaped, not clearly marked off, about 1½ whorls. Surface dully shining, smooth, dark orange or reddish brown, fresh specimens sometimes almost black. Suture false-margined below by a dark spiral band. Outer lip colourless and thin in a narrow zone behind. Columella stands out from base, sometimes forming a minute umbilical chink. Aperture circular; peristome moderately thickened, continuous; anteriolateral part of outer lip slightly excavated, bent downwards posteriorly.

Animal: (Fig. 2). (Narrow Neck). Exposed parts reddish-orange, becoming paler when fully extended. Sole is dense pinkish-white. Cephalic tentacles semi-transparent white, rather short and stout, with blunt tips, continuously mobile. Eyes large, in prominent swellings at outer base of tentacles, a dense group of mucous glands behind. Snout rather short, bilobed, a cluster of large orange-red granules between eyes. Buccal mass brown. Foot fairly long, squarish in front, slightly constricted just behind anterior end, rounded behind. Posterior mucous gland in middle of sole, mucous slit extends to posterior end of foot. Anterior mucous gland bilobed, opening between pro- and mesopodium. Cilia beat posteriorly over lower part of snout and sole. Opercular lobe simple.

Operculum: (Fig. 3). Dark reddish-brown in living animal as opercular lobe visible through the transparent yellowish operculum. Rather strongly convex, oval, nucleus minute; peg stout, blunt and fairly short, with a thin lamella on distal end which emerges diagonally from the operculum. Internal ridge very thick. Muscle insertion area inside ridge, does not extend to outer edge. A weak, narrow ridge runs diagonally for a short distance from inner end of peg.

Radula: (Fig. 4). Short and broad, the teeth very large but delicate. Central small, with a very small median knob and two small, lateral processes. A pair of processes extend below. Lateral large, one very large cusp but no other cusps or denticles. Inner marginal large, with three denticles on outer side of a cusp, and a cusp-like process below cusp. Outer marginal small, with three denticles.

Holotype: (Fig. 1). Takapuna (A.M.).
Height 1.5 mm. Width 1.0 mm.

Material Examined:

Holotype and paratypes; Spirits Bay, shell sand (Hipkins Coll.); Taupo Bay, Whangaroa, 2/1/54 (Hipkins Coll.); Tapeka Point, Russell, -/1/52 (Hikins Coll.); Taurikura Bay, Whangarei Heads, *Corallina,* 15/5/61 (W.F.P.); MacGregor's Bay, Whangarei Heads, under stones (W.F.P.); Smuggler's Bay, Whangarei Heads, shell sand, 6/5/62 (W.F.P.); Bream Tail *Corallina,* 21/8/63 (W.F.P.); Shoal Bay, Great Barrier Island, algae, 6/1/51 (Hipkins Coll.); Okupu, Great Barrier Island, under stones, *Corallina,* fine algae, 24/11/63 (W.F.P.); Goat Island Bay Leigh, under stones, *Corallina, Carpophyllum* (W.F.P.); North side of Tawaranui Point, under stones on papa platform, 31/12/63 (W.F.P.); Waiwera, brown algae, 16/2/64 (W.F.P.); off Otata Island, Noises Group, 4 fathoms, 15/5/63 (W.F.P.); Takapuna, Auckland, *Carpophyllum* in pools, under stones, *Corallina,* 1962-64 (W.F.P.); Narrow Neck Reef, Auckland, *Corallina,* 1962-64 (W.F.P.); Auckland Harbour, Finlay Coll. (A.M.); Sandy Bay, Coromandel, *Corallina,* 30/3/64 (W.F.P.); Stony Bay, Coromandel, *Corallina,* short algae, 28/3/64 (W.F.P.); Jackson's Bay, Coromandel, *Corallina,* 29/3/64 (W.F.P.).

Distribution: The North East of the North Island in the lower littoral zone and down to a few fathoms.

Ecology: *P. micans* usually lives amongst algae in the lower littoral zone. In some areas it is very common in *Corallina,* while nearby in apparently similar conditions, it may be quite scarce, for example as seen in parts of Taurikura Bay. Living specimens were common in a dredging from off Otata Island, Noises Group, with the related species, *E. subflavescens,* even more abundant. The sediment consisted of coarse sand and *Tawera* valves.

Subgenus **OTATARA** n. subgen.

Type (o.d.) *Notosetia subflavescens* Iredale, 1915 (nom. nov. for *R. atomus* Suter, 1908, non Smith).

Though the shells of *E. micans* and *E. subflavescens* are similar, the radula is very different, so that at least subgeneric distinction for the latter species is warranted. The characteristics of the subgenus are those of *E. (O.) subflavescens,* which is described below.

Eatonina (Otatara) subflavescens Iredale. Plate 15, figs. 5-8.

1908 *Rissoa atomus* Suter, Proc. Mal. Soc. Lond., 8, p. 30, pl. 2, fig. 27.
1913 *Rissoa* (*Setia*) *atomus* (Suter); Suter, Man. N.Z. Moll. p. 212, pl. 12, fig. 20.
1915 *Notosetia subflavescens* Iredale, (nom. nov. for *R. atomus* Suter, 1908, non Smith), Trans. N.Z. Inst. 47, p. 453.
1933 *Notosetia subflavescens* Iredale; Powell, Rec. Auck. Inst. Mus. 1 (4), p. 199, pl. 34, fig. 8, (lectotype).
1955 *Notosetia subflavescens* Iredale; Powell, D.S.I.R., Cape Exped. Series Bull., 15, p. 85.

This species was originally described from rather poorly preserved material from off the Bounty Islands, and I have seen very little other material from this area. However shells that are almost identical with Bounty Island specimens are found in the North East of the North Island, and are here tentatively recognised as the same species.

The shell is variable in size, the relative height of the spire, and, the convexity of the whorls. This species differs from *E. micans,* which it resembles closely, in having a shorter spire, a proportionately larger body whorl, more convex whorls, and a relatively larger aperture which is angled anteriorly making it pyriform rather than circular. Also the inner lip above the columella is slightly convex, not concave as in *E. micans,* and the shell is usually lighter in colour, being yellowish-brown to reddish-brown. The shell is imperforate, but a narrow chink between the rather thickened columella and base sometimes has the appearance of a narrow umbilicus. *E. atomaria* has a shorter spire, a thinner shell, and more strongly convex whorls.

Animal: (Off Otata Island). External coloration greyish to white, semi-transparent, except sole which is dense white. Cephalic tentacles minutely setose, not tapering, rather thick, not very active; eyes at outer bases of tentacles, with a short, white, triangular patch behind them. Snout bilobed, expanded anteriorly, granular except for anterior edge, anterior end of oral tube bright red. Opercular lobe simple. Sole with a mucous slit extending from posterior end for about two-thirds of its length. A ciliated strip on right side of body, just behind eyes.

Operculum: (Fig. 7). Pale reddish-brown in the living animal. Generally similar to *P. micans,* yellowish, semi-transparent, rather strongly curved, with a muscle insertion area on outer side of a strongly thickened, but transparent, internal ridge. Peg short, broad, bilobed. An oblique dense ridge terminates upper end of the muscle insertion area. Growth lines weak. Nucleus very small.

Radula: (Fig. 8). Broad and short, with large delicate teeth. Central tiny with a median knob and weak lateral ridges. Lateral with a single large cusp. Inner marginal simple, curved; outer marginal small, triangular, with a broad base.

Lectotype: (Fig. 5). Bounty Islands, in 50 fathoms (Captain Bollons) (G.S.).

Height 1.225m. Width 0.875 mm.

Material Examined:

Lectotype; paralectotypes (D.M.); N.Z.O.I. Stat. C. 760, 34° 10.8' S., 172° 8.4' E., fathoms, bryozoan substrate, 18/2/62 (O.I.); Dredged off the Mokohinau Islands (W.F.P.); 25 fathoms, Hen and Chickens, Finlay Coll. (A.M.); Great Barrier Island, 8-10 fathoms, R. K. Dell Coll. (D.M.); Taurikura Bay, Whangarei Heads, shell sand (W.F.P.); off Otata Island, Noises Islands, 4 fathoms, 15/5/63 (W.F.P.); Mt. Maunganui-Mayor Island area, in fish stomach contents, G. Williams (Powell Coll.); off Bounty Islands (Powell Coll.).

Distribution: The North East of the North Island, and the Bounty Islands, in shallow to moderately deep water. The large gap in the known distribution will possibly be filled in with more intensive collecting, but it is more probable that the Northern form deserves subspecific status.

Subgenus **SAGINOFUSCA** n. subgen.

Type: *Notosetia atomaria* Powell, 1933.

Shell: Small, reddish-brown, spire broadly conical, approximately same height as aperture, whorls strongly convex, false-margined, smooth. Periphery and base rounded, umbilicate. Aperture nearly circular, very slightly angled above, peristome continuous, a little thickened.

Animal: Cephalic tentacles long, slender, very finely setose not tapering, with blunt tips, eyes on prominent swellings at their outer bases. Snout deeply bilobed, small. Foot moderately elongate, sole with mucous slit in mid-posterior half extending to posterior end. Opercular lobe simple.

Operculum: Transparent but solid, with a very thick internal ridge extending from a rather blunt, wide peg to right end, and not far in from columellar edge. Nucleus very small. Muscle insertion area indistinct.

Radula: Very short and wide with large, but rather delicate, teeth. Central small, no true cusps but only short blunt processes. Lateral tooth large, roughly rectangular, main cusp large, 3 + 1 + 3 (or 2). Inner marginal wide, with 4 large cusps. Outer marginal much smaller, 3-4 small cusps.

The species of this subgenus are characterised by their globose, reddish-brown shells, which are simple in build and appearance. The convex whorls and short spire separate *Saginofusca* from *Otatara* and *Eatonia* (sensu stricto) though the different radula structure is the most important characteristic.

Eatonina (Saginofusca) atomaria (Powell). Plate 15, figs. 9-12.

1933 *Notosetia atomaria* Powell, Rec. Auck. Inst. Mus. 1 (4), p. 198, pl. 34, fig. 9.
1962 *Notosetia atomaria* Powell; Smith, Rec. Dom. Mus. 4 (5), pp. 51-52, fig. 6.

This small shell is easily recognised by its short spire, and dark brown colour. Other distinguishing features are the imperforate to narrowly umbilicate base, rounded aperture, and the very convex whorls which become rather loosely coiled in large specimens (see Smith (1962) fig. 6). Most shells encountered, however, are rather small and compact.

Though originally described from the Chatham Islands, this species was recently recorded by Smith (1962) from Stewart Island. I have found it to be abundant in many parts of New Zealand, and especially so in the Hauraki Gulf where it is usually confused with *E. micans* by collectors.

Animal: (Fig. 10). (West Tamaki Heads). Exposed parts white. Cephalic tentacles constantly active, not tapered, with blunt tips, covered with very short stationary cilia. Eyes large, on prominent swellings at outer bases of tentacles. Snout deeply bilobed, rather small. Anterior margin of foot slightly concave, with a propodium and a fairly extensive anterior mucous gland. Posterior mucous gland opens into a long slit which runs through mid posterior part of sole. Opercular lobe simple.

Operculum: (Fig. 11). Semi-transparent, but rather solid, strongly curved, pear-shaped, nucleus minute, with a strongly thickened internal ridge, peg short, blunt, with a thin flange. Only very faint growth lines visible.

Radula: (Fig. 12). Short and broad, with large, but rather delicate, teeth. Central small, with blunt, short processes. There are two short, processes which are on middle part of dorsal edge, a single process on each side of these, and two more below each outer process. Lateral with one main cusp, three small denticles internal to this and three on outer side. Inner marginal curved, with four cusps and a wide basal portion; outer marginal small, with four cusps.

Holotype: (Fig. 9). Waitangi, Chatham Islands (A.M.).
Height 1.2 mm. Width 0.95 mm.

Material Examined:

Holotype and paratypes; Spirits Bay in shell sand (Hipkins Coll.); Taupo Bay, Whangaroa, shell sand, E. R. Richardson, 11/4/51 (D.M.); Taupo Bay, (Hipkins Coll.); Tapeka Point, Russell, -/1/52 (Hipkins Coll.); Poor Knights Islands, under stones in pools, brown algae, 4/4/64 (W.F.P.); MacGregor's Bay, Whangarei Heads, algae, 22/5/63 (W.F.P.); Taurikura Bay, Whangarei Heads, *Corallina,* 18/5/61 (W.F.P.); Bream Tail, in *Corallina, Carpophyllum* in rock pools, under stones, 21/8/63 (W.F.P.); Laing's Beach, Mangawai, shell sand (Hipkins Coll.); Goat Island Bay, Leigh, *Corallina,* brown algae, under stones, 1/1/64 (W.F.P.); Tawharanui Point, North and South side, under stones, *Corallina,* 31/12/63 (W.F.P.); Waiwera, *Corallina,* 16/2/64 (W.F.P.); Campbell's Bay, Auckland, *Caulerpa,* W. Ballantine (W.F.P.); Takapuna, Auckland, *Corallina,* 1962-64 (W.F.P.);; Narrow Neck Reef, Auckland, *Corallina,* 1962-64 (W.F.P.); Point Chevalier, Auckland, algae, R. K. Dell (D.M.); West Tamaki Heads, Auckland, *Corallina,* -/8/62 (W.F.P.); West of Cornwallis, Manukau Harbour, *Corallina,* 7/1/62 (W.F.P.); Jackson's Bay, Coromandel, *Corallina,* 29/3/64 (W.F.P.); Stony Bay, Coromandel, *Corallina,* short algae, 28/3/64 (W.F.P.); Tolaga Bay, R. K. Dell, 28/11/50 (W.F.P.); Days Bay, Wellington Harbour, algae, 11/12/61 (W.F.P.); Island Bay, algae (D.M.); Paremata Harbour, 1957 (W.F.P.); Bluegum Point, Kenepuru Sound (W.F.P.); Tahunanui, Nelson (Powell Coll.); Gollan's Bay, Lyttelton Harbour, brown algae, W. R. B. Oliver, 26/3/10 (D.M.); Ships' Channel side of Quarantine Island, Dunedin Harbour, *Corallina,* soft brown algae, 4/9/63 (W.F.P.); Portobello, Dunedin Harbour, under stones, soft red algae, 3/9/63 (W.F.P.); Taieri Beach Otago, algae, Finlay Coll. (A.M.); Fish Rock, Foveaux Strait, 30 fathoms, O. Allan, -/6/51 (D.M.); Bathing Beach, Stewart Island, O. Allan, 1950 (D.M.); Thule, Paterson Inlet, Stewart Island, algae at low spring tide, -/1/50 (Smith Coll.); Aker's Point, Halfmoon Bay, Stewart Island, 22/2/63, M. Spong (W.F.P.); Waitangi, Chatham Islands, algae on rocks between tides, W. R. B. Oliver, -/12/09 (D.M.); Waitangi, low tide, W. R. B. Oliver, 8/12/09 (D.M.); Red Bluff, Chatham

Islands, W. R. B. Oliver, 6/12/09 (D.M.); Chatham Island Exped. Stn. 38, South of Little Mangere, 43 fathoms, M.V. "Alert", 2/2/54 (D.M.).

Distribution: The East Coasts of the North and South Islands, West Coast Harbours of the North Island, Stewart Island, and the Chatham Islands, on algae in the lower littoral zone.

Eatonina (Saginofusca) maculosa n. sp. Plate 15, figs. 13-15.

Shell small, depressed, helicoid, umbilicate, brown, with rows of white spots, of 3¼ whorls. Protoconch smooth, with a yellowish tip, rest brown, slightly convex, of 1¼ whorls. Adult whorls strongly convex, dark brown, with two rows of white square shaped spots, one just above the periphery, another just below, lower row developed somewhat later. About 13 spots in the upper spiral series on body whorl. Umbilicus wide, deep, dark red brown in colour. Whorls narrowly margined with dark red brown, and columella also this colour. Aperture angled slightly posteriorly. Inner lip slightly convex a little detached from body whorl; columella concave, rather thickened. Outer lip with a distinct posterior cleft at suture, produced forward slightly below this, retracted anteriorly, margin yellow, semi-transparent.

Animal and Operculum: Very similar to *E. atomaria*.

Radula: Very similar to *E. atomaria*. Central with a pair of dorsal knobs, and an inner and outer pair of short processes below dorsal edge, and two pairs of short basal processes. Lateral 2 + 2 + 2, the third and fourth cusps rather large, others small. Inner marginal with 4 cusps, outer marginal with 3 cusps.

Holotype: Poor Knights Islands, on the undersides of masses of the vermetid *Novastoa lamellosa* (Hutton), 4/4/64, W.F.P. (A.M.).

Height 0.775 mm. Width 0.8 mm.

Material Examined:

Holotype and paratypes; Poor Knights Islands, under stones in rock pools, hard coralline algae, 4/4/64 (W.F.P.); Tawharanui Point, South side, under stones, 31/12/63 (W.F.P.); MacGregor's Bay, Whangarei Heads, shell sand, 9/4/55 (Hipkins Coll.), Tryphena, Great Barrier Island, shell sand, 1951 (Hipkins Coll.).

Distribution: The North East of the North Island. A rather rare species.

Subfamily EATONIOPSINAE n. subfam.

(Type genus *Eatoniopsis* Thiele, 1912 (*Eatoniella paludinoides* (Smith, 1902)).

Genera similar to *Eatoniopsis* appear to form a natural group, with clear cut shell, radula and opercular characters. Though the operculum bears a peg-like process, this is but weakly developed and, in view of the repeated occurrence of opercular pegs in various groups, it should not be considered a primary feature in classification. The radula, which is a much better guide to relationship, shows affinity with that of *Cingulopsis* and *Eatonina,* in that the central tooth is relatively small and the lateral large, but the radula, as a whole, is much smaller and differs in many details. The operculum of *Eatonia* bears a peg, but is of a different type from that of the Cingulopsinae.

Though details of the anatomy of *Rufodardanula* (nov.) are largely unknown, the male is aphallate and the stomach is fairly large and sacular and therefore in contrast to the minute, U-shaped stomach of the Cingulopsinae. Until more details of the anatomy are at hand, the creation of a family for this group seems unwarranted.

Animal: Exposed parts similar to that of the Eatoniellidae and Cingulopsidae. Cephalic tentacles long, not tapering, minutely setose; eyes large, in swellings at outer bases of tentacles. Snout short, bilobed. Foot with a distinct propodium and a long, well developed, mucous slit extending from centre of sole to posterior end. Posterior mucous gland distinct. Opercular lobe simple and no accessory tentacles. Male aphallate.

Operculum: Oval to nearly circular, thin, transparent, flexible. Peg small, sometimes rudimentary, growth lines very distinct.

Radula: Ribbon small. Central tiny, with 1-3 cusps, lateral large, with many cusps; marginal long, with few or many cusps.

Boogina Thiele, 1913, is also a member of this subfamily.

"Eatoniopsis" ainsworthi Hedley does not 'neatly' fit into any genus on shell characters. It can, however, be tentatively included in *Ovirissoa* (Rissoidae).

Genus RUFODARDANULA n. gen.

(Type: *R. spadix* n. sp.)

Subgenus **Rufodardanula**

Shell: Minute, reddish brown, thin and fragile, smooth, broadly conical; whorls, periphery and base convex; narrowly umbilicate. Aperture small, angled posteriorly, columella vertical, with a weak swelling above; peristome continued as a thin glaze across parietal wall.

Animal: As described for the family.

Operculum: Oval, thin, transparent, colourless; columella margin broad; peg small but solid, extending past columellar margin. Growth lines prominent.

Radula: Central small, square, with one cusp and lateral thickenings. Lateral large, with about 12 small cusps; marginals long, pointed, with a wide base, minutely serrate.

Rufodardanula (Rufodardanula) spadix n. sp. Pl. 15, figs. 1-4.

Shell very small, reddish-brown, thin, ovate-conic, smooth. Whorls 4, convex sutures, false-margined with a dark band; protoconch smooth, not marked off from succeeding whorls; body whorl large, periphery and base convex. Aperture moderately large, columella nearly vertical, with a weak swelling; peristome continuous, not thickened; outer lip thin, very little retracted. Umbilical chink very small. Colour reddish-brown, a dark band below sutures, and dark around umbilical area and on columella.

The new species differs from R. (*T.*) *exigua* n. sp., which is of similar size, by having a broader shell with more convex whorls. The two species are nearly identical in colour and general shell features.

Animal: (Leigh) (Fig. 2). As described for the family. Not pigmented.

Operculum: (Fig. 3) and *Radula* (Fig. 4): As described for the subgenus.

Holotype: (Fig. 1). Goat Island Bay, Leigh, *Corallina*, 1/1/64, W.F.P. (A.M.).

Height 0.9 mm. Width 0.6 mm.

Paratypes: Auckland, Dominion and Canterbury Museums, Geological Survey, Lower Hutt.

Material Examined:

Holotype and paratypes; N.Z.O.I. Stat. C. 760, 34° 10.8' S., 172° 8.4' E., off Three Kings Islands, 44 fathoms, bryozoan substrate, 18/2/62 (O.I.); Taupo Bay, shell sand, 2/1/54 (Hipkins Coll.); Poor Knights Islands, under stones in pools, 4/4/64 (W.F.P.); Kaitoke, Great Barrier, short algae, 16/11/63 (W.F.P.); MacGregor's Bay, Whangarei Heads, shell sand, 9/4/55 (Hipkins Coll.); Tawharanui Point, North side, under stones on papa platform, 31/12/63 (W.F.P.); Narrow Neck Reef, Auckland, *Carpophyllum plumosum* in rock pool, 26/3/63 (W.F.P.).

Distribution: The far North and North-East of the North Island.

Subgenus **TUBBREVA** n. subgen.

Type: *Rufodardanula (Tubbreva) exigua* n. sp.

Shell very similar to *Rufodardanula*, though often more elongate and imperforate.

Operculum: Similar to that of *R.* (*R.*) *spadix*, but has a very short, almost rudimentary peg, which is only slightly thickened, and has a more expanded columella edge.

Radula: Very minute or absent as it has defied all attempts at mounting. Until anatomical and radula characters are known, *Tubbreva* is considered to be subgeneric to *Rufodardanula*.

Rufodardanula (Tubbreva) exigua n. sp. **Plate 16, figs. 5, 6.**

1962 *Notosetia* sp. (discussed in relation to *N. exaltata* Powell) Smith, Rec. Dom. Mus. 4 (5), p. 52.

Shell minute, thin, fragile, smooth, red-brown, elongate-conic, imperforate. Whorls 4¼, weakly convex, protoconch dark red-brown, smooth, small, not distinctly marked off. Sutures false-margined by a dark, red-brown, narrow band; body whorl not swollen, periphery and base rounded. Aperture rather large, angled above and below, peristome thin, continuous, a thin glaze across parietal wall. Columella vertical, with a faint swelling above. In holotype and majority of specimens encountered outer lip thin, fragile, very slightly excavated, though occasional shells show some thickening of entire peristome. Colour reddish-brown on spire, a pale brown, indistinct band in middle of body whorl, periphery and base reddish-brown, darker below sutures and in umbilical area. Variation in size, shape, and convexity of whorls considerable.

Though superficially similar to the deepwater *R. minitula*, that species differs in having a blunter protoconch, nearly flat whorls, and a rounded aperture. *R. exaltata* differs in its larger size, broader spire and heavier shell.

Animal: (Leigh). As described for family. Head and foot unpigmented. Very active, foot and tentacles highly mobile.

Operculum: (Fig. 6). Oval, thin, transparent, colourless, curved; columella edge strongly convex, extending to the left round peg and raised above nucleus, which is very small. Peg tiny, very little thickened, not extending over edge of operculum. Growth lines very strong and irregular.

Radula: Unknown.

Holotype: (Fig. 5). East of Purau, Lyttelton Harbour, on fine brown weed in rock pools between tides, W. R. B. Oliver, 4/9/10 (ex Dominion Museum) ex W.F.P. Coll. (A.M.).

Height 0.1 mm. Width 0.575 mm.

Paratypes: Auckland, Dominion and Canterbury Museums, Geological Survey, Lower Hutt.

Material Examined:

Holotype and paratypes; Great Island, Three Kings Islands, sublittoral algae, A. Baker (W.F.P.); Spirits Bay, algae, W. R. B. Oliver, 1929 (D.M.); 12 fathoms, Doubtless Bay, Finlay Coll. (A.M.); Tapeka Point, Russell, algae, R. K. Dell (D.M.); Poor Knights Islands, under vermetid masses, hard coralline algae, 4/4/64 (W.F.P.); MacGregor's Bay, Whangarei Heads, shell sand, 9/4/55 (Hipkins Coll.) and algae, under stones, 22/5/63 (W.F.P.); Bream Tail, *Corallina,* 21/8/63 (W.F.P.); Kaitoke, Great Barrier Island, under stones, -/11/63 (W.F.P.); Tryphena, Great Barrier Island, 5-6 fathoms (Powell Coll.), 6 fathoms, A. W. B. Powell (D.M.) and shell sand, -/1/55 (Hipkins Coll.); Goat Island Bay, Leigh, *Carpophyllum plumosum, Corallina,* various short, soft algae, 1962-64 (W.F.P.); Tawharanui Point, North side, *Carpophyllum* in pools on papa platform, 31/12/63 (W.F.P.); Campbells Bay, Auckland, *Caulerpa,* W. Ballantine (W.F.P.); Brown's Bay, Auckland, brown algae, 19/1/64 (W.F.P.); Takapuna, Auckland, *Corallina, Carpophyllum plumosum,* 1962-64 (W.F.P.); West Tamaki Heads, Auckland, *Corallina,* -/8/62 (W.F.P.); Cornwallis, Manukau Harbour, *Corallina,* brown algae, 7/1/62 (W.F.P.); Jackson's Bay, Coromandel, *Carpophyllum plumosum,* fine red algae, 29/3/64 (W.F.P.); Sandy Bay, Coromandel, *Corallina,* 30/3/64 (W.F.P.); 35 fathoms, Tuhua Reef, Mayor Island, fish stomach contents, G. Williams (Powell Coll.); Cape Runaway, algae, A. W. B. Powell, -/8/33 (Powell Coll.); Tolaga Bay, shell sand, R. K. Dell, 28/11/50 (D.M.); Gisborne, shell sand, 1906 (D.M.); Lyall Bay, Wellington, *Cystophora,* W. R. B. Oliver, 18/12/21 (D.M.); Island Bay, Wellington, algae, -/9/27 (D.M.); algae, 28/2/59 (W.F.P.); Owhiro Bay, Wellington, *Corallina,* 29/2/63 (W.F.P.); Day's Bay, Wellington Harbour, algae, 11/12/61 (W.F.P.); Titahi Bay, *Corallina,* 11/12/61, and shell sand, -/11/55 (W.F.P.); Karehana Bay, Plimmerton, *Xiphophora,* 7/12/61 (W.F.P.); Brother's Island, Cook Strait, sublittoral algae, D. E. Hurley, -/5/51 (D.M.); Long Beach, Durville Island, in pools, W. R. B. Oliver, 13/2/43 (D.M.); Kaikoura, *Corallina,* R. A. Rusmussen, 12/6/64, fine brown algae, P. Luckens, 12/8/64 (W.F.P.); Oaro, South of Kaikoura, coralline algae, W. Ballantine, 19/2/64 (W.F.P.); Motanau Beach, Canterbury, coralline algae, R. R. Forster, 17/1/48 (D.M.); East of Purau, Lyttelton Harbour, fine coralline algae, and fine brown weed in rock pools between tides, W. R. B. Oliver, 4/9/10 (D.M.); Gollan's Bay, Lyttelton Harbour, *Perna* zone, brown algae, W. R. B. Oliver, 26/3/10 (D.M.); Taylor's Mistake, Bank's Peninsula, *Cystophora,* soft coralline algae, in pools, W. R. B. Oliver, 10/4/10 (D.M.) and coralline algae, -/9/63 (W.F.P.); Okain's Bay, Bank's Peninsula, W. R. B. Oliver, 10/11/06 (D.M.); East of Diamond Harbour, Lyttelton Harbour, *Corallina,* -/9/63 (W.F.P.); Bushy Beach, Oamaru, coralline algae, 24/2/64 (W.F.P.); Little Papanui, Dunedin, coralline algae, red algae, 5/9/63 (W.F.P.); Portobello, Dunedin Harbour, brown and red algae, *Corallina,* 3/9/63 (W.F.P.); Ships' Channel side of

Quarantine Island, Dunedin Harbour, brown and fine red algae, *Corallina*, 4/9/63 (W.F.P.); Taieri Beach, Finlay Coll. (A.M.); Taieri River Mouth, coralline algae, W. Ballantine, 27/6/64 (W.F.P.); Foveaux Strait, oyster scrapings, 1957 (W.F.P.); Halfmoon Bay, Stewart Island, algae, E. Smith, 12/4/52 (W.F.P.); Halfmoon Bay, shell sand, O. Allan, -/1/47 (D.M.); Paterson Inlet, Stewart Island, algae, 15/9/56 (Smith Coll.); Thule, Paterson Inlet, Stewart Island, algae, 7/8/56 (Smith Coll.); Horseshoe Bay, Stewart Island, shell sand, -/12/57 (Smith Coll.).

Distribution: The North and South Islands, mainly restricted to the East Coast though it is known from the Cook Strait West Coast and the Manukau Harbour. It also occurs at Stewart Island. *R.* (*T.*) *exigua* inhabits finely-divided algae in the littoral and sublittoral.

Rufodardanula (Tubbreva) exaltata exaltata (Powell). Plate 16, figs. 8-11.

1933 *Notosetia exaltata* Powell, Rec. Auck. Inst. Mus. 1 (4), p. 198, pl. 34, fig. 5.
1962 *Notosetia exaltata* Powell; Smith, Rec. Dom. Mus. 4 (5), p. 52, fig. 8.

Typical *R.* (*T.*) *exaltata* is similar to *R.* (*T.*) *exigua* n. sp. but larger in size, with flatter whorls, heavier shell and with a bluntly rounded periphery.

Operculum: (Stewart Island). (Fig. 11). Similar to that of *R.* (*T.*) *exigua* but with a slightly heavier peg and the columella margin is a little less expanded.

Holotype: Off Owenga Beach, Chatham Islands, 10 fathoms, in clean shell sand (A.M.).

Height 1.55 mm. Width 0.9 mm. (from Powell)

Material Examined:

Paratypes; Days Bay, Wellington Harbour, algae, 11/12/61 (W.F.P.) (c.f. *exaltata*); Ships' Channel side of Quarantine Island, Dunedin Harbour, fine red, brown algae, *Corallina*, 4/9/63 (W.F.P.); Portobello, Dunedin Harbour, *Corallina*, red algae, 3/9/63 (W.F.P.); Portobello, 1-3 fathoms, 3/8/63 (W.F.P.); off Bragg's Point, Stewart Island, 40 fathoms, E. Smith, -/5/59 (D.M.); Butterfield's Beach, Stewart Island, shell sand, O. Allan, -/10/47 (D.M.); Bathing Beach, Stewart Island, shell sand, O. Allan, 1950 (D.M.); Paterson Inlet, Stewart Island, algae, -/1/50 (Smith Coll.); off Mouth of Halfmoon Bay, 8 fathoms, algae, -/4/59 (Smith Coll.); B.S. 107, Goal Passage, Doubtful Sound, 25 fathoms, M.V. "Alert", W. H. Dawbin, 8/5/50 (D.M.); Doubtful Sound, 50 fathoms (W.F.P.); Chatham Islands Exped. Stat. 23, 43° 32.5' S., 176° 47.5' W., North of the Sisters, 33 fathoms, M.V. "Alert", 29/1/54 (D.M.); Chatham Islands Exped. Stat. 24, 43° 36.2' S., 176° 48.5' W., South of the Sisters, 38 fathoms, 29/1/54 (D.M.).

Distribution: The South Island, possibly restricted to the Southern half, Stewart Island, and the Chatham Islands, from low tide to moderately deep water.

Rufodardanula (Tubbreva) exaltata sorenseni (Powell). Plate 16, figs. 12, 13.

1955 *Notosetia sorenseni* Powell, D.S.I.R., Cape Exped. Series, Bull. 15, p. 87, pl. 3, fig. 20.

R. (*T.*) *exaltata sorenseni* is very similar to *R.* (*T.*) *exaltata*, differing only in the shorter spire which results in a relatively more inflated body whorl.

Operculum: (Campbell Island). (Fig. 13). Very similar to that of *R.* (*T.*) *exaltata*.

Holotype: (Fig. 12). Campbell Island, Cape Expedition, J. H. Sorensen, 1943 (A.M.).

Height 1.125 mm. Width 0.775 mm.

Material Examined:

Holotype and paratypes; 50 fathoms, Snares Islands, Finlay Coll. (A.M. and Powell Coll.); 6 fathoms, Emergency Bay, Carnley Harbour, Auckland Islands, Cape Expedition, C. A. Fleming (Powell Coll.); Campbell Island, Cape Expedition, J. H. Sorensen, 1943 (Powell Coll.); 50 fathoms, Bounty Islands, Finlay Coll. (A.M.).

Distribution: Snares, Auckland, Campbell and Bounty Islands, in shallow to moderately deep water.

Rufodardanula (Tubbreva) minutula (Powell). Plate 16, fig. 7.

1936 *Dardanula minutula* Powell, Discovery Rep., 15, p 204, pl. 53, fig. 14.

The operculum of this species is unknown, but the general shell features place it, with some degree of certainty, in *Tubbreva*. The shell can be distinguished from *R.* (*T.*) *exigua* n. sp., which is of similar size, by its flatter whorls and, especially, by the rather thicker shell. The aperture is smaller and more nearly circular than in *R.* (*T.*) *exigua*, and the columella swelling hardly visible. Rather strong growth striae are developed, and, in certain lighting, faint spiral lines can be seen in the semi-transparent shell. Animal, operculum and radula unknown.

Holotype: Discovery II Stat. 933, off the Three Kings Islands in 260 metres.

Height 0.95 mm. Width 0.55 mm. (from Powell)

Material Examined:

Paratypes (A.M.); N.Z.O.I. Stat. C. 760, 34° 10.8' S., 172° 8.4' E., off the Three Kings Islands, 44 fathoms, bryozoan substrate, 18/2/62 (O.I.).

A SUMMARY OF THE NOMENCLATURAL CHANGES.

TROCHACEA

Fam. Liotiidae

Notosetia Iredale 1915. (*Barleeia neozelanica* Suter)
N. neozelanica Suter, 1898.
N. aoteana Powell, 1937.

RISSOACEA

Fam. Rissoidae

Subfam. Rissoinae

Rissoa (*Haurakia*) Iredale, 1915. (*Rissoa hamiltoni* Suter)
R. (*H.*) *aupouria* (Powell, 1937).
R. (*H.*) *infecta* (Suter, 1908).
Powellisetia n. gen. (*Rissoa porcellana* Suter).
P. bilirata n. sp.
P. crassilabrum (Powell, 1940).
P. gradata (Suter, 1908) (= *Notosetia fairchildi* Powell, 1933).
P. lineata (Smith, 1962).

P. microstriata (Murdoch, 1905) (= *Notosetia antipoda* Powell, 1955).
P. porcellana (Suter, 1908) (= *Rissoa stewartiana* Suter, 1908). (= *Dardanula convexispira* Powell, 1955).
P. porcellanoides (Powell, 1937).
P. retusa (Powell, 1927).
P. subgradata (Powell, 1937).
P. subtenuis (Powell, 1937) (= *Notosetia multilirata* Powell, 1940). (= *N. subcarinata* Powell, 1940). (= *N. foveauxana* Smith, 1962).
P. tenuisculpta (Powell, 1933).
P. unicarinata (Powell, 1930).
Austrorissopsis n. gen. (*Rissopsis brevis* May, 1919).
Rissopsis (*Peringiella*) Monterosato, 1878. (*Rissoa laevis* Monterosato).
R. (*P.*) *elegans* n. sp.
R. (*P.*) *lubrica* (Suter, 1898).
R. (*P.*) *simplex* (Powell, 1927).
Ovirissoa Hedley, 1916 (*Rissoa adarensis* Smith, 1962)
O? ainsworthi (Hedley, 1916).

Fam. Cingulopsidae

Subfam. Cingulopsinae

Eatonina (*Eatonina*) Thiele, 1912. (*E. pusilla* Thiele, 1912).
E. (*E.*) *micans* (Webster, 1905).
E. (*Otatara*) n. subgen. (*Notosetia subflavescens* Iredale, 1915).
E. (*O.*) *subflavescens* (Iredale, 1915).
E. (*Saginofusca*) n. subgen. (*Notosetia atomaria* Powell, 1933).
E. (*S.*) *atomaria* (Powell, 1933).
E. (*S.*) *maculosa* n. sp.

Subfam. Eatoniopsinae

Rufodardanula n. gen. (*R. spadix* n. sp.).
R. (*Rufodardanula*) n. subgen.
R. (*R.*) *spadix* n. sp.
R. (*Tubbreva*) n. subgen. *R.* (*T.*) *exigua* n. sp.).
R. (*T.*) *exigua* n. sp.
R. (*T.*) *exaltata exaltata* (Powell, 1933).
R. (*T.*) *exaltata sorenseni* (Powell, 1955).
R. (*T.*) *minutula* (Powell, 1936) (*Dardanula*).

ACKNOWLEDGEMENTS

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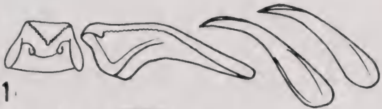
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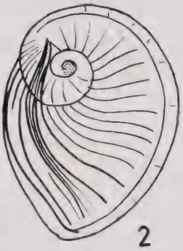
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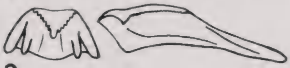
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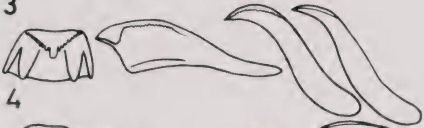
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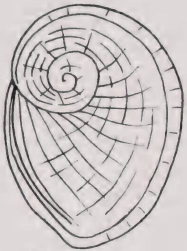
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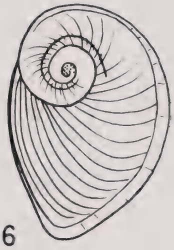
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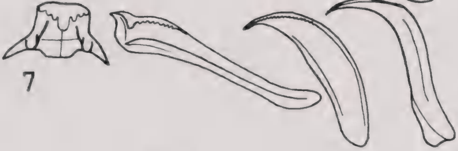
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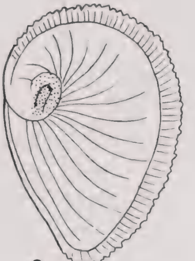
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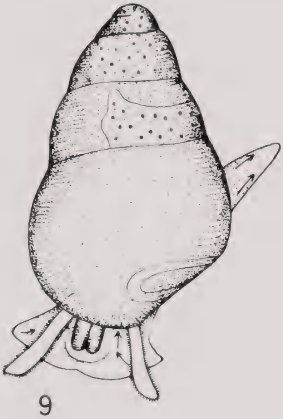
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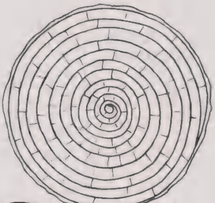
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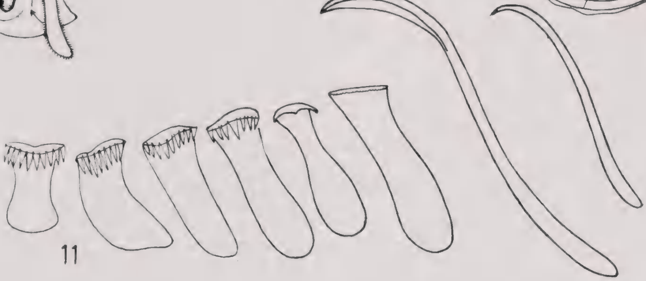
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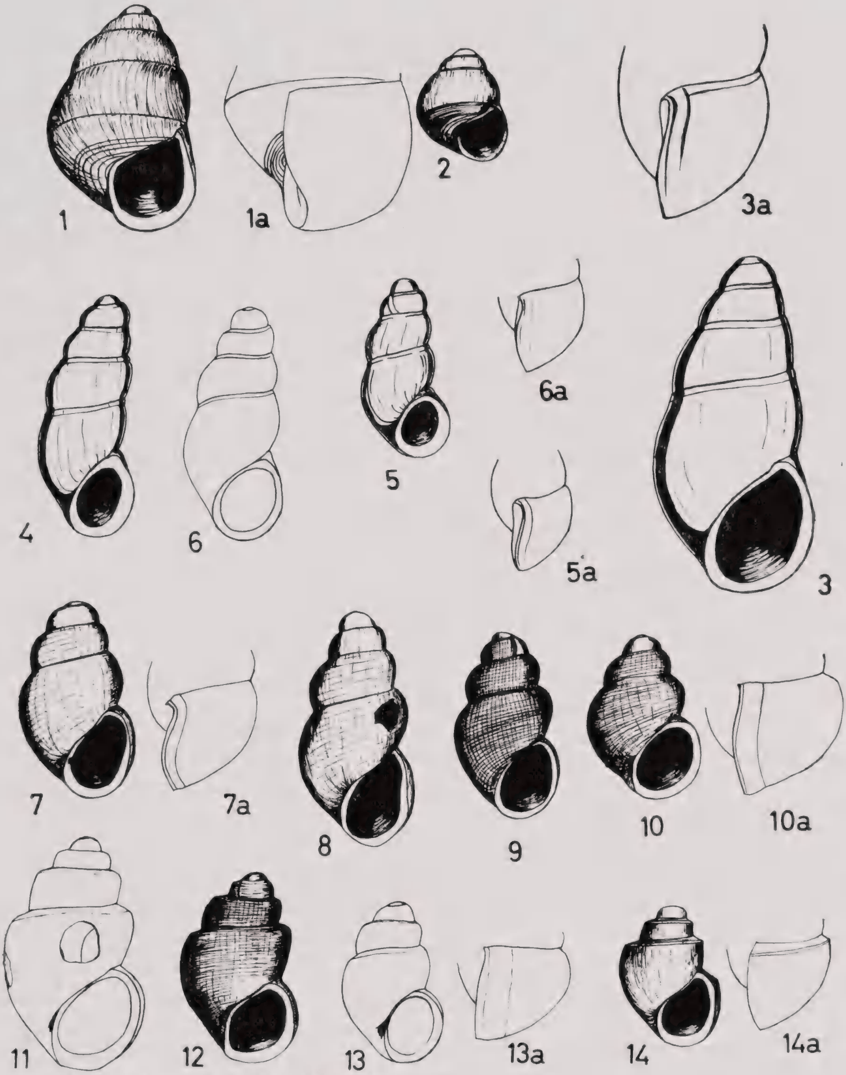
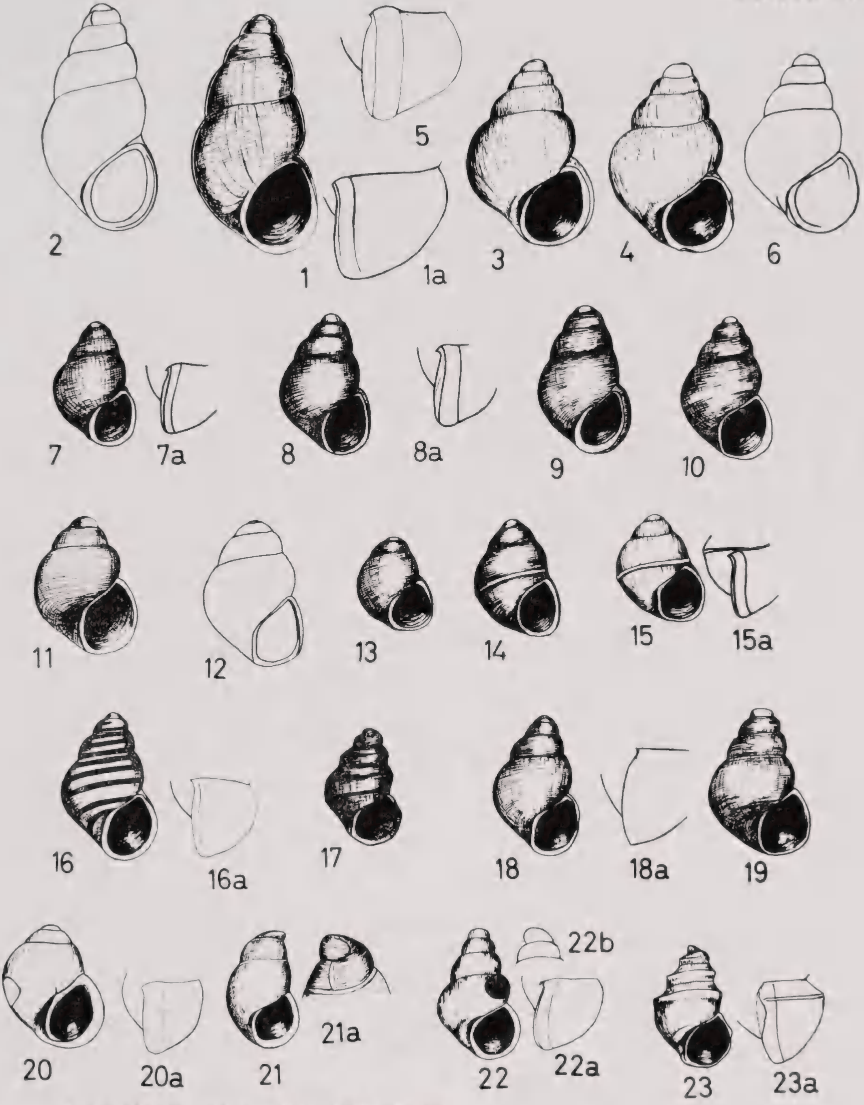
Powellisetia porcellana (Suter)
Fig. 1. Radula.
2. Operculum (inner side).
Powellisetia tenuisculpta (Powell)
3. Central and lateral teeth of the radula.
Powellisetia subtenuis (Powell)
4. Radula.
5. Operculum (inner side).
Powellisetia porcellanoides (Powell)
6. Operculum (inner side).
Rissopsis (*Peringiella*) *elegans* n. sp.
7. Radula. 8. Operculum (inner side).
Powellisetia subtenuis (Powell)
9. Dorsal view of the living animal.
Notosetia neozelanica (Suter)
10. Operculum (inner side).
11. Radula.

PLATE 13



Notosetia neozelanica (Suter)
Fig. 1, 1a. Paralectotype 2.05 x 1.4 mm.
Notosetia aoteana Powell
2. Paratype 1.0 x 0.8 mm.
Rissopsis (*Peringiella*) *elegans* n. sp.
3, 3a. Holotype 3.1 x 2.15 mm.
Rissopsis (*Peringiella*) *lubrica* (Suter)
4. Foxeaux Strait 2.225 x 0.875 mm.
5, 5a. Foveaux Strait 1.65 x 0.775 mm.
6, 6a. Paratype of *Notosetia benthicola* Powell 2.15 x 0.9 mm.
Powellisetia retusa (Powell)
7, 7a. Holotype 1.825 x 1.05 mm.
8. Paratype 2.2 x 1.05 mm.
Powellisetia gradata (Suter)
9. Bounty Islands, 170 fathoms 1.75 x 0.95 mm.
10, 10a. Holotype of *Notosetia fairchildi* Powell 1.525 x 1.05 mm.
11. Paratype 2.175 x 1.3 mm.
12. 30 fathoms off Halfmoon Bay, Stewart Island 1.775 x 1.1 mm.
13, 13a. 30 fathoms off Halfmoon Bay, Stewart Island 1.5 x 0.9 mm.
Powellisetia subgradata (Powell)
14, 14a. Paratype 1.3 x 0.925 mm.

PLATE 14



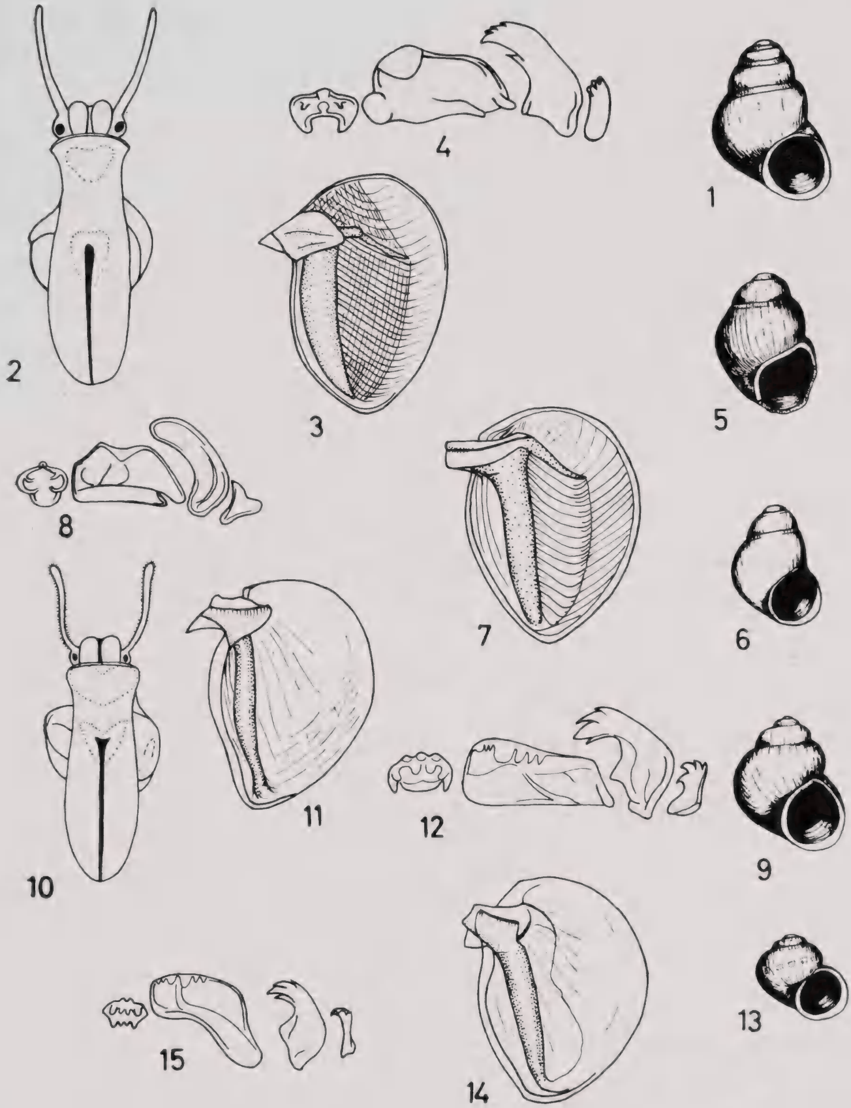
Powellisetia microstriata (Murdoch)
Fig. 1, 1a. 30 fathoms, off Halfmoon Bay, Stewart Island 2.15 x 1.25 mm. Fig. 2. Holotype of *Notosetia antipoda* Powell.

Powellisetia porcellana (Suter)
Fig. 3. Paratype 1.675 x 1.15 mm. Fig. 4. Lectotype of *Notosetia stewartiana* (Suter) 1.7 x 1.25 mm. Fig. 5. Off Port William, Stewart Island. Fig. 6. Holotype of *Dardanula convexispira* Powell 1.6 x 1.0 mm.

Powellisetia subtenuis (Powell)
Fig. 7, 7a. Paratype 1.125 x 0.7 mm. Fig. 8, 8a. Off Port William, Stewart Island, 1.275 x 0.8 mm. Fig. 9. Hen and Chicken Islands, 25 fathoms, 1.35 x 0.825 mm. Fig. 10. 30 fathoms, off Poutama Island, South Cape, Stewart Island (= *tenuisculpta* of Smith) 1.3 x 0.8 mm.
Fig 11. Paratype of *Notosetia foveauxana* Smith 1.225 x 0.9 mm.
Fig. 12. 12 fathoms, Doubtless Bay 1.3 x 0.875 mm. Fig. 13. Holotype of *Notosetia multilirata* Powell 0.825 x 0.65 mm. Fig. 14. 100 fathoms, off Big King Island, Three Kings Islands 1.075 x 0.725 mm. Fig 15, 15a. Holotype of *Notosetia subcarinata* Powell 1.0 x 0.75 mm.

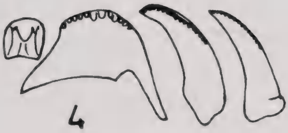
Powellisetia lineata (Smith). Fig. 16, 16a. Paratype 1.35 x 0.85 mm. *Powellisetia bilirata* n. sp. Fig. 17. Holotype 1.05 x 0.675 mm. *Powellisetia tenuisculpta* (Powell). Fig. 18, 18a. Holotype 1.25 x 0.75 mm. Fig. 19. Off Port William, Stewart Island 1.325 x 0.9 mm. *Powellisetia crassilabrum* (Powell). Fig. 20, 20a. Holotype 1.1 x 0.9 mm. *Powellisetia* c.f. *porcellanoides* (Powell). Fig. 21, 21a. 12 fathoms, Awanui Bay 1.05 x 0.625 mm. *Powellisetia porcellanoides* (Powell). Fig. 22, 22a, 22b. Paratype 1.2 x 0.725 mm. *Powellisetia unicarinata* (Powell). Fig. 23, 23a. Holotype 1.1 x 0.7 mm.

PLATE 15



Eatonina (*Eatonina*) *micans* (Webster)
Fig. 1. Holotype 1.5 x 1.0 mm.
2. Ventral view of the living animal.
3. Operculum (inner side). 4. Radula.
Eatonina (*Otatara*) *subflavescens* (Iredale)
5. Lectotype 1.225 x 0.875 mm.
6. Off Otata Island, Noises Group, Hauraki Gulf, 1.05 x 0.75 mm.
7. Operculum (inner side). 8. Radula.
Eatonina (*Saginofusca*) *atomaria* (Powell)
9. Holotype 1.2 x 0.95 mm.
10. Ventral view of the living animal.
11. Operculum (inner side). 12. Radula.
Eatonina (*Saginofusca*) *maculosa* n. sp.
13. Holotype 0.775 x 0.8 mm.
14. Operculum (inner side). 15. Radula.

PLATE 16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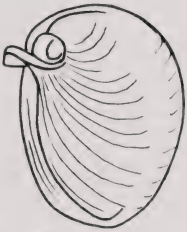
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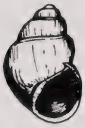
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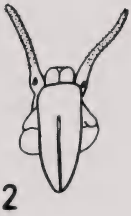
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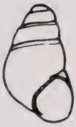
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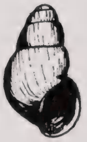
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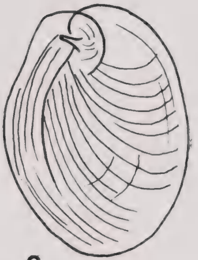
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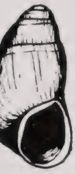
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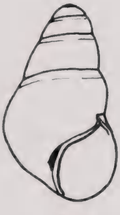
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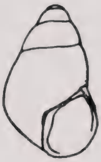
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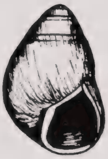
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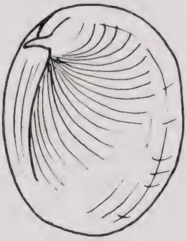
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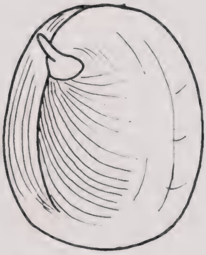
13

Rufodardanula (*Rufodardanula*) *spadix* n. sp.
Fig. 1. Holotype 0.9 x 0.6 mm. 2. Ventral view of living animal.
3. Operculum (inner side). 4. Radula.
Rufodardanula (*Tubbreva*) *exigua* n. sp.
5. Holotype 0.1 x 0.575 mm. 6. Operculum (inner side).
Rufodardanula (*Tubbreva*) *minutula* (Powell)
7. Paratype 0.9 x 0.5 mm.
Rufodardanula (*Tubbreva*) *exaltata exaltata* (Powell)
8. Paratype 1.225 x 0.65 mm. 9. Paratype 1.5 x 0.875 mm.
10. 8 fathoms, off Halfmoon Bay, Stewart Island 1.15 x 0.7 mm.
11. Operculum (inner side).
Rufodardanula (*Tubbreva*) *exaltata sorenseni* (Powell)
12. Holotype 1.125 x 0.775 mm. 13. Operculum (inner side).